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JPME Today

Godzilla Methodology

China's Role in Afghanistan

Report Documentation Page

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Cover 2 images (top to bottom): Soldier fires tube-launched, optically tracked, wire-guided missile at heavy weapons range on Forward Operating Base Salerno, Afghanistan (U.S. Army/Todd A. Christopherson); crew chief dedicated for RQ-4 Global Hawk attaches Dash-95 air cart, which provides air to starter for launch of unmanned aircraft system (U.S. Air Force/Bennie J. Davis III); and Sailors prepare F/A-18E Super Hornet to launch from USS *George Washington*, providing combat-ready force that protects and defends collective maritime interest of United States and its allies and partners in Indo-Asia-Pacific region (U.S. Navy/Ricardo R. Guzman).

In this Issue

About the Cover

Marines with Weapons Company, 3rd Battalion, 8th Marine Regiment prepare to board MV-22 Osprey during Tactical Recovery of Aircraft and Personnel mission at Marine Corps Base Camp Upshur, VA, November 26, 2013, in preparation for deployment (USMC/Ed Galo).

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Letter

In *Joint Force Quarterly* 71 (4th Quarter 2013), Karen Kaya offers a number of perspectives on the North Atlantic Treaty Organization's (NATO's) evolving missile defense project, in particular those shaping Turkey's calculations as it works to define its role. Ms. Kaya makes a numbers of observations that merit comment.

Irrational Actors and Extended Deterrence. Kaya is right to suggest that some new actors who may present strategic threats to NATO may prove difficult to deter, and while one cannot rule out the possibility of an adversary that truly acts without regard to costs, risks, and benefits, the main challenge to deterrence is not the irrationality of adversaries but rather, properly understanding their strategic intentions, capabilities, decisionmaking, and degree of commitment. Certainly, an adversary's development of asymmetric strategies and its preparedness to pay a high price in pursuit of advantage or victory can hardly be considered hallmarks of irrationality. Kaya is closer to the mark when she later states that missile defense provides the means to add a denial component to traditional deterrent strategies based on the threat of unacceptable retaliation, implicitly acknowledging the premise that adversaries armed with ballistic missiles may think twice about using such weapons if they stand a good chance of being intercepted.

Adversaries making such an assessment are by definition rational—even if they weigh costs, risks, and benefits differently than we do. But Kaya's assertion that the advent of missile defense represents a transformational shift *away from* extended deterrence is mistaken. Extended deterrence as a concept and a policy does not include or exclude any particular set of military capabilities or strategies. Both "deterrence by punishment" and "deterrence by denial" are perfectly compatible with the theory and practice of extended deterrence. U.S. extended deterrence assurances to its Allies have not changed, much less been transformed; NATO remains a nuclear alliance and indeed has chosen in recent years not to make fundamental changes to its nuclear deterrence mission. Thus, missile defense is best viewed as complementing the nuclear deterrence mission, hopefully providing new opportunities for burden-sharing and enhanced decisionmaking flexibility in a crisis. If the Alliance determines one day that missile defense and other nonnuclear strategic capabilities can replace nuclear-sharing arrangements as the core of extended deterrence, that truly would be transformational. But that seems a distant prospect.

History. Kaya's brief historical references are not fully accurate and less than complete. It is true that the Reagan-era Strategic Defense Initiative (SDI) was a source of friction between the United States and Soviet Union, though whether it ever precipitated a crisis in relations is debatable. SDI certainly was controversial, in part because of its cost, but the reorientation of the U.S. approach to missile defense was driven principally by the end of the Cold War and the emergence of regional missile threats, exemplified at the time by Saddam Hussein's Iraq. Thus, on the eve of the first Gulf War, President George H.W. Bush announced a major reconfiguration of SDI to focus on limited missile threats from any source, to include protection of the United States, forward deployed forces, power projection capabilities, and the territory of allies and friends. After the Gulf War, the Clinton administration emphasized the development of theater missile defenses to protect against regional threats; capabilities to protect the homeland were given lesser priority but not abandoned.

When the intelligence basis for prioritizing short-range over long-range missile threats was challenged by the Rumsfeld Commission in the late 1980s, the Clinton administration reconfigured its missile defense program to give greater weight to protecting the homeland against potential regional intercontinental ballistic missiles (ICBMs). The administration of George W. Bush accelerated and expanded this effort, though to infer that this was a resurrection of the SDI program is mistaken. Kaya is correct that the missile capabilities of North Korea and Iran were the principal concerns, but she does not make clear that it was those nations' potential development of ICBMs that drove the program—and less so their continued investment in short-, medium-, and intermediate-range missiles.

To fully address the potential ICBM threat from Iran, the second Bush administration promoted a so-called Third Site in Eastern Europe (to complement two U.S.-based sites). The agreement reached with Poland and the Czech Republic was for the deployment, respectively, of 10 two-stage ground-based interceptors and a sophisticated X-Band radar. The Patriot missiles Ms. Kaya refers to were not part of the Third Site. They were essentially a sweetener for Warsaw under which the United States agreed to deploy Patriots to Poland and train Polish units in their operation. These missiles, of course, provided no protection against Iranian ICBMs. Kaya is correct that the Third Site initiative was strongly opposed by Moscow, but the termination of these arrangements was not undertaken principally to ease political tensions; rather, it reflected the Obama administration's new approach to missile defense based on an updated assessment of the threat (which Kaya does not mention) and concerns about reliability and affordability. Indeed, as Kaya herself notes, the European Phased Adaptive Approach (EPAA) has done little to ease tensions with Moscow over missile defense.

Russia's Position. The roots of Moscow's opposition to NATO missile defense run deep and reflect a range of grievances and anxieties that goes beyond the relatively narrow question of whether projected Alliance capabilities pose a meaningful threat to Russia's nuclear deterrent. Unfortunately, this broader

context is missing from Kaya's article. On the question of capability, she states that the now-canceled Phase Four of the EPAA "would have capability against some of Russia's strategic forces." She does not explain what she means by that. By the citation, her statement appears to be based on the findings of the September 2011 report by Yousaf Butt and Theodore Postol published by the Federation of American Scientists. I am not a physicist, so I will not engage on technical issues. But Kaya should not have asserted this conclusion as ground truth; she should have offered a more balanced and nuanced discussion of this question, which is a critically important aspect of the ongoing U.S.-NATO-Russian dispute on missile defense. At a minimum she should have noted that this issue is contentious, that Butt and Postol themselves place important caveats around their analysis, and that other respected experts have come to different conclusions (notably, Dean Wilkening's "Does Missile Defence in Europe Threaten Russia?" *Survival*, February–March 2012).

Turkey. I defer to Kaya on matters Turkish where her expertise far exceeds mine. This part of the article conveys a strong understanding of Ankara's thinking and there are many useful insights. But I was surprised not to see mention of the government's anticipated—now announced—decision to purchases a missile defense system from a Chinese company that has been sanctioned by the United States. Even taking account of cost and coproduction considerations, this decision certainly had to be understood as one that would invite conflict with Turkey's NATO allies. It is entirely possible, of course, that Ankara will change course. But how should we try to reconcile this development with the other decisions that Kaya documents demonstrating Turkey's commitment to NATO's missile defense project?

—Paul Bernstein
Senior Research Fellow
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of Mass Destruction
National Defense University

IN MEMORIAM

David C. Jones

General, U.S. Air Force
Chairman of the Joint Chiefs of Staff
June 21, 1978 to June 18, 1982

Volunteering for the Army Air Corps shortly after Pearl Harbor, General Jones received his commission and pilot wings in early 1943. During the Korean War, General Jones flew more than 300 hours on combat missions against North Korea. In 1969, he served in the Republic of Vietnam as Deputy Commander for Operations and then as Vice Commander of the Seventh Air Force.

In August 1971, General Jones assumed command of U.S. Air Forces in Europe and the Fourth Allied Tactical Air Force, was promoted to general in September, and led the way toward establishing the integrated air headquarters in the North Atlantic Treaty Organization's Central Region, Allied Air Forces Central Europe.

General Jones became Chief of Staff of the U.S. Air Force in July 1974 and was responsible for administering, training, and equipping a worldwide organization of men and women employing the world's most advanced defense systems.

On June 21, 1978, General Jones was appointed Chairman of the Joint Chiefs of Staff. As Chairman during the turbulent post-Vietnam years, he was a spokesman for increased defense effort—placing major emphasis on enhancing the combined capabilities of U.S. combat forces. In his last year in office, General Jones conducted an extensive examination of the systemic problems within the joint system, resulting in a proposal to make legislative changes to the National Security Act to strengthen the quality and timeliness of military advice and to improve the combined readiness and effectiveness of combat forces. This prompted the most active debate on organizational issues in defense since the 1950s when President Eisenhower proposed to strengthen the joint system.

At the time of his retirement, General Jones's 8 years as a member of the Joint Chiefs of Staff—4 as Air Force Chief and 4 as Chairman—were the longest in history, and uniquely he served four different Presidents and four different Secretaries of Defense during that time.

A graduate of the National War College in 1960, General Jones was awarded an honorary doctorate of humane letters degree from the University of Nebraska at Omaha in 1974, an honorary doctorate of laws degree from Louisiana Tech University in 1975, and an honorary doctorate of humane letters degree from Minot State College in 1979.

Chairman addresses U.S. Servicemembers during town hall event at Yokota Air Base, Japan, regarding importance of maintaining strong bilateral ties to ensure security throughout Asia-Pacific region (U.S. Air Force/Yasuo Osakabe)

From the Chairman

Mount Up and Move Out

The Joint Force remains unrivaled. We deter threats, assure partners, and defeat adversaries. We are strong—and our nation is secure—because we commit to being the best led, best trained, and best equipped force as our non-negotiable imperative. You, the men and women of the Joint Force—all volunteers—are the Nation's qualitative military edge. We are who we are because of your commitment and determination. The world is not getting any safer, but we are becoming more adaptable.

We are facing three transitions—to a different force posture, to a smaller defense budget, and for some, to civilian life. We can only lead through these transitions with the trust of the force, our families, and the American people. This midpoint of my term as the 18th Chairman prompts an assessment of our work so far and informs the work we still have to do. I would like to update you on my focus areas and how I intend to guide our activities for the next 2 years. It builds on what you have already accomplished. I am confident that, together, we can fortify the foundation for the future force.

Achieve Our National Military Objectives

At its core, our military keeps the Nation free from coercion. Whether at home or deployed, the Joint Force deters adversaries, protects our critical infrastructure, preserves the free flow of commerce, responds to crisis, and builds partner capabilities. The Joint Force's enduring power comes from our ability to balance our response, rotation, and reset activities. Despite the current budget uncertainty, we must prioritize threats, articulate risk, and allocate resources in support of a systematic and sustainable strategy. We have to provide the Nation options. These options depend on the creativity of our people, the readiness of our forces, and the risk we are willing to underwrite.

Achieving our national military objectives also requires that we develop and evolve our relationships with our interagency and international partners. The cooperative practices we establish will play a large part in our success. The lessons we learned during the past 12 years are being applied today and will help us adapt to the challenging days ahead. The combat-tested quality of the force—from battlefield leaders to combatant commanders—will continue to guarantee U.S. security over the next 2 years.

Develop Joint Force 2020

The Joint Force of tomorrow must be able to achieve our national security objectives against a threat that is increasingly difficult to define, even as we reduce budgets. We must use this period of transition to renew our commitment to the cornerstone of our military advantage—innovation and leader development. We need to reassess what capabilities we need most, rethink

how we develop and aggregate the Joint Force, and reconsider how we fight together. We must develop a research and development strategy that maximizes our ability to nurture promising technologies and to rapidly and efficiently build them out into the force.

Fundamental to Joint Force 2020 is interoperability. Our capabilities, tactics, techniques, procedures, and terminology must translate across the Services, the interagency, and with our partner nations. Becoming the force of the future demands that we develop, test, and refine concepts for the future fight. We must mobilize the entire Joint Force Development enterprise to forecast those capabilities. We know that we will be a smaller force and that we must adapt to be increasingly agile. Our task is to carry forward those lessons learned from yesterday into the context of today.

Renew Our Commitment to the Profession of Arms

Our profession is grounded in our sacred oath to defend the Constitution. We remain committed to defending the Nation and the values it has pursued for more than 200 years. We must hold true to these enduring values of service even as we remake our force and its capabilities. Our force is as diverse and rich in experience as it has ever been. Twelve years of war have created a generation of leaders experienced in joint and interagency operations. The future force will require the skills and knowledge of both our battle-tested veterans and the contributions of new Servicemembers who bring fresh skills and perspectives to new ways of warfare.

The cornerstone of service must remain dignity and respect among all members of the force. The mortar is leadership. We must set the example of extraordinary character and exceptional competence at every echelon. We must seek and share best practices to combat sexual assault, suicide, and high-risk behaviors. We will implement 360-degree reviews for all general and flag officers on the Joint Staff to make us aware of our strengths and weaknesses and enable us to grow as leaders of the Joint Force.

General Dempsey talks with U.S. Marine Corps drill instructors at 4th Recruit Training Battalion, Parris Island (DOD/Charles Marsh)

These reviews serve as overt reminders of the uncompromising standards of our conduct and the enduring tenets of our oath. We contribute to our profession by reinforcing these principles every day.

The ethical decisions and proper behavior of each member of the Joint Force mold our professional reputation. Each one of us—from the private to the general—represents the whole of our profession. Our actions speak louder and echo longer than our words.

Keep Faith with Our Military Family

We keep faith with the Nation by making sure the Joint Force is the best led, best trained, and best equipped in the world, ready to meet any mission. The health and well-being of our people is critical to our national security and the future of the force.

We must prioritize and synchronize our support to reflect the needs of today's military family, which is as diverse as the Nation it serves. We must ensure we are investing in the right services at the right time while adapting for the future needs of the force. We are committed to being upfront and honest about the tough choices we face and the changes that will occur, as they affect our people personally.

We must also consider what our military means to the people it protects—our fellow citizens—and how the last 12 years have had an impact on the way we relate to them. On our part, we must actively dispute labels often applied too generally across the force and inform a richer conversation about the character of those who volunteer to serve. We also have a duty to the Nation to listen. Our fellow citizens have different perspectives that we need to hear and understand. Military service is about stability, meaning, and variety, and we must continue to inspire those who will volunteer to serve in the future.

I have been impressed with what the Joint Force has accomplished in my 2 years as Chairman, over 12 years of war, and throughout my 39 years of military service. But there is more work to be done, and I need your help to do it. Together, we can ensure we remain the most respected profession, the global leader, and the Nation's strength.

I'm proud to serve with you. **JFQ**

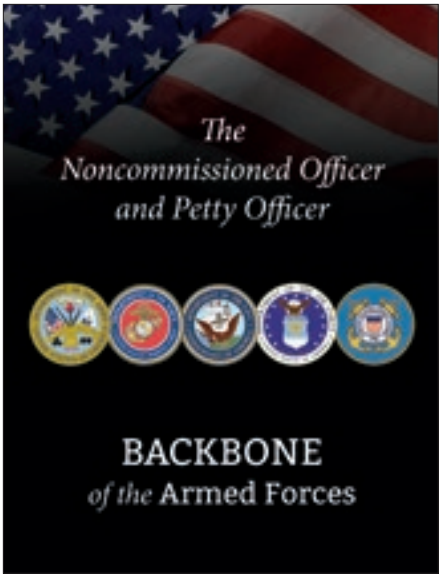
Martin E. Dempsey
General, U.S. Army
Chairman of the Joint Chiefs of Staff

Washington and Lafayette at Valley Forge
(John Ward Dunsmore/Library of Congress)

Backbone of the Armed Forces

It was December 17, 1777, and General George Washington's Continental Army had just returned to winter quarters in Valley Forge, Pennsylvania. They were exhausted and had gained minimal success in their fight against the British army. But this period in Valley Forge proved critical for the fledgling army and led General Washington to recruit former Prussian officer Baron Friedrich Wilhelm von Steuben. His new title: Inspector General. His mission: strengthen the professionalism of the Continental Army. Von Steuben's training objectives constituted the first written plan for standards, discipline, and duty for Washington's army, and he created the first manual that outlined the duties and responsibilities of the noncommissioned officer (NCO). So in an important way, December 17 is considered the birthdate of the U.S. Armed Forces NCO corps.

Across the years, from its birth to the present, the NCO corps (and the petty officer corps of our sea-going Services) experienced an enormous professionalization, diversity, growth, skill, and empowerment. For nearly two and a half centuries they have proudly carried the battle colors; stood tall in rank and file; maintained ships, planes, and tanks; led the patrols; inspected the lines; and manned the rails.



I was fortunate to lead an effort in developing a book that captures the significance of these military leaders throughout the history of America's Armed Forces. Why so fortunate? Because I had a team of intellectually savvy and extremely talented leaders who served as the A-team of chapter writers. I would like to introduce the *Joint Force Quarterly* readership to the Defense Department's newest book, *The Noncommissioned Officer and Petty Officer: Backbone of the Armed Forces* (NDU Press, 2013).

As a symbolic testament to our obligation and affirmation to our calling as noncommissioned officers, December 17 was chosen specifically as the official release date of the book. A ceremony took place in the Pentagon, officiated by the 18th Chairman of the Joint Chiefs of Staff. I truly find this book to be a "best seller" not only because of the knowledge of the folks who wrote it and the role of the people who will read it, but also because of the story it tells. It is written by, for, and with noncommissioned officers and petty officers. It is an inspiring, thought-provoking, leadership-enhancing book that captures the character of the noncommissioned officer and petty officer. It is grounded in the Profession of Arms, complementary to the *Armed Forces Officer* book and our enlisted Service manuals, yet written to be distinctive in its own right. You will enjoy its contents as it exposes and captures noncommissioned officer and petty officer attributes and competencies without diluting Service branch expectations or standards. The book defines why our NCO corps is historically and traditionally branded as the "Backbone" of the U.S. Armed Forces.

It is a privilege to serve as a noncommissioned officer or petty officer in America's all-volunteer force. We represent a professional and empowered cadre of enlisted leaders that society respects and admires and a community of leaders that many nations envy. Each of us carries an obligation, a responsibility, and a professional, moral, and ethical bond toward every American we have sworn to protect.

The book is available through the U.S. Government Printing Office. It is also available online at these sites:

- NDU Press: www.ndu.edu/press/nco.html
- Joint Electronic Library: www.dtic.mil/doctrine/nco.htm
- JDEIS: http://jdeis.js.smil.mil/jdeis/index.jsp?pindex=97

You can also download the book onto your device by scanning this code:

We hope you will acquire a personal copy and enjoy its contents. **JFQ**

Bryan B. Battaglia, USMC
Senior Enlisted Advisor to the
Chairman of the Joint Chiefs of Staff
and the Senior Noncommissioned Officer
in the U.S. Armed Forces

Executive Summary

There was a time when "jointness" had no champions. There was a time when professional military education at the Service colleges offered little in the way of joint content. Joint military operations often revealed a lack of basic coordination, much less cooperation or cohesion. Despite examples in World War II of joint coordination in various operations, after the war, Army Chief of Staff General Dwight D. Eisenhower and Chief of Naval Operations Admiral Chester Nimitz committed their respective Services to work together to establish a joint military education effort 40 years before the Goldwater-Nichols Department of Defense Reorganization Act of 1986 required it.

Those who have spent time at the Joint Forces Staff College (JFSC) might be aware of the April 1946 memo from Eisenhower to Nimitz recommending the establishment of the Armed Forces Staff College. Eisenhower saw a "distinct joint necessity" for a school focused on courses that teach officers from all Services and branches "joint staff technique and procedures in theatres and joint overseas operations." He believed that there was a need "for a school of this type for officers of our services prior to attendance at the National War College." Since the National War College (NWC) was located in Washington, DC, at Fort Lesley J. McNair, the Nation's third-oldest Army base, it seemed appropriate for the Staff College to be located on a naval base. The rest, as they say, is history with today's JFSC—the successor to the Armed Forces Staff College—still educating officers about joint operations and planning at National Defense University's (NDU's) southern campus in Norfolk, Virginia.

But where did the continuing support for this idea of jointness come from after Congress created NDU in 1976? For 40 years after the Ike memo, these schools and their graduates were not enough to negate the need for legislation later on to bring the Services closer together. Legislation mandating jointness arrived in the form of Public Law 99-433 (Goldwater-Nichols), widely recognized as the most sweeping change to be ordered for the Defense Department since its formation in 1947.

Recently we lost two of the strongest supporters of jointness: General David C. Jones, USAF, the ninth Chairman of the Joint Chiefs of Staff, and Representative Isaac "Ike" Newton Skelton IV of Missouri. The deaths of General Jones and Congressman Skelton require, I believe, that we pause to reflect on their individual and combined legacies, especially on the effect each man had on joint professional military education (JPME).

While many can rightfully claim to have been a part of the push for jointness, few joint advocates at the level of General Jones and Congressman Skelton were as consistently in the vanguard of support both to achieve and to keep jointness successfully and permanently in place. Interestingly, neither man had obvious reasons to do so based on their origins. General Jones volunteered for the Army Air Corps shortly after Pearl Harbor and became a pilot in 1943 before finishing college, and while his résumé shows no undergraduate degree, he would later graduate from the NWC in 1960. Based on how his story unfolds after his NWC education, we can assume that joint education had a positive effect and served him well for the next 22 years of his career, culminating in sequential terms as Chief of Staff of the Air Force from 1974 to 1978 and Chairman of the Joint Chiefs of Staff from 1978 to 1982. As Chairman, General Jones worked hard to push for reforms, including those of the role of Chairman that exist today because of Goldwater-Nichols. So committed was General Jones in the reform to support jointness that he continued work to change the Services' relationship and the Chairman's role even after his retirement in 1982, directly influencing the legislators who would write and eventually pass Goldwater-Nichols, including Congressman Skelton.

If one has doubts concerning the power of education, particularly JPME, look to General Jones. Imagine if you were one of his NWC instructors and later on witnessed his substantial efforts to forge jointness into law: his advocacy for jointness may have been based on an idea he was assigned to study in one of your classes, or a conversation he had with a classmate from another Service or part of the government, or from collaborating with a student from a partner nation.

Would he have achieved as much as he did had he not attended the NWC? It is possible. He had been General Curtis LeMay's aide, had served in three wars, worked on future weapon systems development, and more. But would he have been such a forceful advocate for jointness without what we now call "JPME experience"? Maybe. Who would fault him for retaining his Service loyalties? One might also conclude that he must have given significant weight to some of the ideas he encountered at NWC, and the JPME he received at NWC had a positive influence on General Jones during the rest of his military career. Moreover, even after he retired from service, he was motivated to seek the advancement of the power of the Chairman in addition to many other changes that would undoubtedly make the joint force a reality.

At the same time, a man from Missouri who had seen no military service to speak of would take the lead in solidifying joint education as a part of the military experience. Representative Skelton served for more than 30 years in the House of Representatives and he chose to make it his personal responsibility that the United States had the best military in the world. His many contributions to the military were the result of his personal efforts as a steadfast advocate for JPME. *Joint Force Quarterly* will

have an article on Ike Skelton's life and legacy in the next issue. I am certain all who have been a part of JPME over the years know Congressman Skelton's work well and look for another member of the U.S. Congress to step forward as a similar champion for an educated joint force.

This edition of *JFQ* has a number of significant updates in both style and content. First, the journal has a subtle but different look in design. We have always worked hard to be economically efficient yet maintain a high quality of editorial content to our audience each quarter. The changes in style address two trends in the publishing industry. First, our new, streamlined presentation of compelling ideas in this issue helps us to develop an online presence for the journal with a more Internet-friendly process. Second, the new design is easier to read, has fewer distracting page elements, and costs the taxpayer less money to produce. We hope you will enjoy *JFQ* even more as we go forward.

On the content front, with the Chairman's emphasis on joint education as a key ingredient to the future joint force, we are positioning *JFQ* to support authors and ideas from the JPME community more directly in order to get the best ideas into and out of those education environments. Our Forum section features articles from JPME faculty, researchers, and students on a range of issues including JPME itself, useful issues to explore in the classroom, and online distance learning—anywhere *JFQ* is read.

In the next issue, our Special Feature section will be retitled "JPME Today" and dedicated to articles that explore the world of JPME.

As mentioned, this issue's Forum presents insights from and for the JPME community and begins with Professor Nicholas Murray's views on how PME supports the development of Mission Command. Bringing the voice of an administrator to the discussion of the quality of faculty at the war colleges, George Reed describes ongoing issues involved in the selection, development, and retention of this critical element of the JPME equation. Jeffrey Shaw shows us how the Naval War College continues the tradition of wargaming born in the 1920s while testing naval employment strategies. James Butler has found the Japanese science fiction movie character Godzilla as a useful means to student enlightenment on center of gravity theories. From one of the leading research centers here inside the Beltway, William Burns and Drew Miller offer a great article that discusses how the Defense Department can adapt and survive black swan events.

In our Special Feature section, Jason Brown argues that it is time to abandon our Cold War–era ISR collection management methods and replace them with a strategy-oriented approach. Harry Foster operationalizes Air-Sea Battle through the formation of a joint stealth task force. Providing valuable coalition insights, Matthew Martin describes efforts under way to improve joint ISR coordination and the North Atlantic Treaty Organization ISR Initiative.

This issue's Commentary presents two important discussions. Eileen Chollet's research results compare how the highest of combat awards—valor decorations—have been granted over time. Looking at the fiscal environment our nation finds itself confronting, Presidential impoundment, a somewhat obscure power of the executive branch, is a better way to reduce spending according to Lawrence Spinetta.

In Features, we present a wide range of ideas from around the globe. Technology has been brought to bear to identify friendly civilians, as David Pendall and Cal Sieg provide an in-depth look at the employment of biometrics in Regional Command–East. Cindy Hurst and Robert Mathers shed light on one important aspect of Afghanistan's economic and geopolitical future: China's efforts at mining the country's rich mineral deposits. As the Arctic region becomes more accessible to ship traffic, Heath Roscoe, Paul Campagna, and Dave McNulty assess the requirements for search and rescue in the Arctic region as activity continues to increase there for longer periods each year. Looking to leverage significant new capabilities available both to the joint force and to our allies, Robbin Laird, Edward Timperlake, and Murielle Delaporte outline a new approach for military strategy in the 21st century.

In our Recall section we continue our look back at World War I and leadership lessons as Bert Frandsen discusses the combat record of Brigadier General William "Billy" Mitchell. There are also three book reviews that should help you expand your views on a range of subjects. In the Joint Doctrine section, Taylor P. White provides an excellent discussion on where security cooperation fits in doctrine and how it executes in terms of programs and activities, including the regular J7 joint doctrine publication update.

Our *JFQ* team continues to find and bring you new ideas that support better awareness and understanding of jointness. We all stand on the shoulders of giants, in particular General David C. Jones and Congressman Ike Skelton IV, who knew the great value of joint education and of jointness itself. **JFQ**

Dr. William T. Eliason
Editor

Army Staff Sergeant briefs Army Chief of Staff, General George W. Casey, Jr., about new technologies used in war against terrorism (U.S. Army/D. Myles Cullen)

The Role of Professional Military Education in Mission Command

By Nicholas Murray

The debate about the quality and role of professional military education (PME) has been much written about across the Armed Forces and the blogosphere. However, one area that has received scant attention in the debate is the role of education in the military's new system of command—that is, mission command. This is the case despite its proclaimed importance to the future vision of the Service environment. In his Mission Command white paper, General Martin Dempsey outlined mission command's criticality to the concept of Joint Force 2020.[1] To better understand the context of this article, it is helpful to provide the definition of *mission command* used by the Armed Forces: "the conduct of military operations through decentralized execution based upon mission type orders. Successful mission command demands that subordinate leaders at all echelons exercise disciplined initiative and act aggressively and independently to accomplish the mission."[2]

To prepare the forces for that concept, General Dempsey states that mission command "must be institutionalized" throughout the military, with explicit reference to the education system; that is, "[joint and service doctrine, education and training are keys to achieving

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the habit of mission command . . . our schools must teach it, and we must train individually and collectively to it." He goes on, "the education of our officer corps—joint and service—must begin at the start of service to instill the cognitive capability to understand, to receive and express intent, to take decisive initiative within intent, and to trust."[3]

For mission command to work, understanding and clarity of purpose are the two key components. Without an understanding of what is required to meet the endstate of a mission, it is unlikely that a commander can create an order (intent) that gets to the problem at hand. Likewise, without clarity, it is unlikely anyone will understand the commander's intent. So how do we provide understanding and clarity of purpose to our officers? We do it through better education.

In his white paper on Joint Education, General Dempsey requires joint PME to develop the "habits of mind essential to our profession"—that is, critical thinking.[4] A recent brief relating to leader development and education, however, states that the first core competency of the Combined Arms Center (CAC), which is the overseer and guide to joint PME, is "inculcating leaders with a mastery in the art and science of war."[5] The problem with this competency is that *inculcation* is simply rote learning under the guise of a fancy name. Rote learning is sometimes a valuable tool for training, but it does not clearly fit the commander's intent relating to critical thinking.

General Dempsey identifies the development of critical thinking as the key ingredient to the future of PME: "to fully realize the potential of mission command, our joint education efforts must effectively instill the cognitive capability to understand, receive, and clearly express intent, to take decisive initiative within intent, accept prudent risk, and build trust within the force."[6] Thus, we have a conundrum. While General Dempsey is calling for critical thinking, CAC is calling for inculcation. How do we get to effective mission command from there? Moreover, General Dempsey's call is not new. In 1934, Lieutenant General James Breckenridge, commander of the Marine schools at Quantico, wrote, "It is my constant ambition to see the Marine officers filled with ambition, initiative, and originality; and they can get these attributes only by liberality of thought,—broad thought,—thought that differs from precedent and the compulsory imprint of others. I want them to originate,—not to copy."[7]

Similar calls have been made by senior leaders for years. Why then has it proved so difficult to achieve? This is where military culture comes in. There is a fear of white space on the calendar. It suggests "idleness on the part of soldiers," as my former regimental sergeant major might have put it, *idle* being the insult of choice, aimed at anyone who did not look physically busy. Now, that might well relate to my experience as a recruit in the British army, but it is equally applicable in the U.S. military. In addition, effective training can more easily be judged. To that end, the amount of time devoted to a particular subject often seems to be the main metric of measurement.

For example, the Command and General Staff Officer Course (CGSOC) currently devotes roughly 250 school hours of study to mission command, directly or indirectly. This number comes from a total of about 700 hours of core and advanced instruction, going by the 2013–2014 academic year. That looks impressive on paper. However, only around 100 of the teaching hours truly involve critical thinking as it would be understood outside of PME. Additionally, the amount of time devoted to critical thinking has hardly changed despite the emphasis on a command system that is absolutely dependent upon it. This is despite the addition of more hours of instruction into the curriculum at the staff school. This has meant that students, whose critical thinking skills we need to develop, have even less time to think and study than before.

For mission command to work effectively, this cannot be the case. When the Chairman of the Joint Chiefs of Staff provides guidance through his white papers, and a key PME institution appears to do the exact opposite, what message is sent to the PME community and to the Armed Forces writ large?

If the military is to integrate mission command into its way of doing things, it must create a culture within PME that facilitates it. The emphasis should be placed on education rather than training. The tension between these two ideas has provided much fuel to the fire of the regular bashing of PME. The routine lack of understanding of the difference between the two was also unfortunately emphasized in the CAC brief. To get the best out of the personnel passing through PME, both the students and staff must value attendance. In addition, PME culture should promote critical thinking so this is not only an add-on to other parts of the curriculum. How should PME go about achieving this?

The Armed Forces must first ensure that the best officers attend PME institutions. Continuing with CGSOC as our example, the move toward merit-based selection is already on the way, and there have been encouraging signals that this will continue. However, details are scarce, and it is essential that PME institutions do more than shave off the bottom few students. PME needs something more radical. Close to universal attendance has meant there are some students who are not ready for, or capable of, high-level critical thinking. This is not to say there are no bright "go get 'em" types. There certainly are. But there is a larger issue at hand, one that is frustrating both to those officers who really do want to challenge themselves and to their instructors. With universal, or near universal attendance, we really cannot expect much in the way of challenging critical thinking skills from all PME students, and this has a direct effect on the ability of the Armed Forces to implement mission command because effective critical thinking is one of the key components.

Compounding this situation is the fear that officers' attendance in a PME school harms their chances of promotion. Indeed, some officers choose not to attend resident PME. Moreover, if they do choose to attend CGSOC, they sometimes do not choose to go to the follow-on year at the School of Advanced

Afghan air force officer Niloofar Rhmani, accompanied by USAF 438th Air Expeditionary Advisory Group executive officer and AAF pilot advisor, deplanes Cessna 208 becoming first Afghan woman to fly fixed-wing combat mission (U.S. Air Force/Ben Bloker)

Military Studies because of the risks to their careers from an extra year in PME. This fear is not confined to students. The difficulty of getting the best and brightest officers to instruct PME is often criticized for much the same reason. Largely, this is the case because officers need Key Development (KD) jobs as well as time in operations and in command to progress in their careers. Currently, rightly or wrongly neither attendance nor instruction in a PME school is classed a KD assignment. Thus, in many ways, the perception that involvement in PME might be a real hindrance to career progress is all too real. Again, the effect on mission command is a reduction in the level of critical thinking, which can go on in an environment lacking some of the best and brightest instructors and students.

To encourage the best serving officers, the Services should make teaching in a PME institution a KD job, which would be a quantum shift in military culture. By doing so, the Services could avoid the current scramble for KD postings, which often comes at the expense of its personnel attending or teaching at PME institutions. It would also provide a strong incentive for the best and brightest to teach in the PME system, which does not always happen (despite many excellent serving instructors). This would also have the benefit of helping improve critical thinking in the classroom, thus facilitating the use of mission command.

For officers to teach PME (if it becomes a KD position), they should have attended the relevant course and perhaps completed a Master's degree there in a topic relevant to the area in which they wish to teach (in the case of CGSOC, this would be the Master of Military Art and Science). It might also be sensible to require that PME instructors possess a relevant skill identifier in addition to their degrees. This is already the case for history, and there is no reason why it should not also be the case for leadership, tactics, jointness, and logistics.

More officers completing degrees would increase the breadth and depth of the faculty's knowledge as well as provide the results of such research to the wider military community. It would

both improve and expand the intellectual core of the Army (in this case). It would also encourage students, many of whom currently go to online degree Web sites to prepare (while they are attending PME and with an often deleterious effect on their military studies) for their post-Army careers, to focus on more directly relevant topics. Providing a link between PME and military career growth would have the added benefit of more clearly meeting General Dempsey's intent as well as General Breckenridge's ideal from 80 years ago. The infrastructure for much of this is already in place.

Of course, high-quality candidates with at least a Master's degree (related to the subject area in which they are to teach) from other institutions should not be barred from teaching in PME institutions if they are excellent teachers. It should not be enough for someone to check the box of PME attendance to gain a teaching job. Teaching is the main focus of the institutions, and that should remain the case. But too often the criticism has been leveled that many of the teaching staff use PME institutions as a pre-retirement step, and they are accepted as instructors because of the lack of viable alternatives. Whether this is true across PME institutions is subject to debate and beyond the scope of this article. However, encouraging the best to teach through incentives (KD jobs) would help alleviate some of that criticism by encouraging a higher proportion of our best officers to consider attending and teaching PME.

So how would all of this actually help meet General Dempsey's guidance? Selecting the best and brightest for attendance in PME should be a given. Combine this process with high-quality instructors, both outside civilians and officers working in PME as a key part of their career development, and in theory the pieces would fall in place for much-improved critical thinking in the classroom. Civilians would provide a needed break from military culture (something called for in the Skelton Report), assuming they are not all retired military and can teach effectively.

This last point is important. Research, particularly that of Eric Hanushek, a senior fellow in the Hoover Institution at Stanford University, has shown the strong link between teacher effectiveness and student learning. Much of his research focuses on the K-12 school system and the huge gap in learning outcomes for students, depending on whether they are taught by excellent or poor teachers: "The *difference* in student performance in a single academic year from having a good as opposed to a bad teacher can be more than one full year of standardized achievement."[8] Although the focus of his article is on K-12, there is no reason to suppose that the educational outcomes for students in PME are fundamentally different. If that is correct, and this author sees no legitimate reason to doubt it, getting the best people to teach, both military and civilian, is of paramount importance to the mission. This is particularly so if we are to achieve what General Dempsey outlined in his white papers.

To that end, credentialing is important, and it is one method for identifying people with the requisite level of knowledge. However, it does not identify an excellent instructor, who, with a relevant Master's degree, is worth far more to the institution of PME than a bunch of bad instructors who have doctorates. This is not to say that PME does not need instructors with doctorates—quite the opposite. Proper credentialing is vital to make sure that curricula and proper academic standards are maintained, but if PME is to achieve the goals outlined for it, then well-qualified instructors who are also good teachers must be hired and retained. Bad instructors, whatever their credentials, are a liability in the classroom.

So where does this leave us? If the concept of mission command is to succeed, PME needs to change both what it is doing and how it is doing it. The culture of PME has to learn to accept blank space on the calendar. Just because someone is not physically occupied does not mean he is mentally idle. Build in research time for the students and identify it as such. Get them regularly writing: an operations order a week would be an effective means of doing this, and it would also get them thinking and allow them to practice a key part of what they are likely to be doing when they leave. This is where civilians come in. They should have the experience of a civilian graduate program, and they will be more accepting of this scenario. Furthermore, PME must make sure it employs the best serving officers and civilians—not only in terms of qualifications, but also in terms of their teaching skills. Therefore, we must provide instructors with the incentives to make teaching in PME institutions a key part of their careers. Although training remains an essential part of PME, it should not dominate the schedule. There has to be time for officers to *think* about what they have learned. Only that will allow us to excel at the critical thinking required by the Armed Forces of the future.

To end, I can do no better than use the words of Lieutenant General Breckenridge: "If we can stimulate our officers to work as hard and intelligently in an academic sense as they always do in a physical and mental sense when confronted by things 'that can't be done,' then we will open the door for the great man (or men) I hope to see produced."[9] JFQ

Notes

[1] Martin E. Dempsey, Mission Command White Paper, April 3, 2012, available at <www.jcs.mil/content/files/2012-04/042312114128_CJCS_Mission_Command_White_Paper_2012_a.pdf>.

[2] Joint Publication 3-0, *Joint Operations* (Washington, DC: The Joint Staff, August 11, 2011), II-2.

[3] Dempsey, Mission Command.

[4] Martin E. Dempsey, Joint Education White Paper, July 16, 2012, available at <www.jcs.mil//content/files/2012-07/071812110954_CJCS_Joint_Education_White_Paper.pdf>.

[5] "What CAC Does," Leader Development and Education Slide Brief, August 7, 2012.

[6] Dempsey, Joint Education.

[7] Letter from Lieutenant General Breckenridge to Colonel Smith, November 21, 1934, Julian C. Smith Papers, Marine Corps Archives, Private Papers Collection 188, Box 34.

[8] Eric A. Hanushek, "The Trade-off between Child Quantity and Quality," *The Journal of Political Economy* 100, no. 1 (February 1992), 84–117. Italics in original.

[9] Letter from Lieutenant General Breckenridge.

General Dempsey visits U.S. Naval War College to speak to students and faculty about state of U.S. military (U.S. Navy/Eric Dietrich)

The Pen and the Sword

Faculty Management Challenges in the Mixed Cultural Environment of a War College

By George E. Reed

The war colleges recently became the focus of both internal and external criticism.[1] Continuing scrutiny is appropriate in light of their expense and importance as the pinnacle of professional military education (PME). Each Service maintains a war college designed to prepare lieutenant colonels and colonels for the next level of responsibility, and there are two "joint" colleges: the National War College and the Dwight D. Eisenhower School for National Security and Resource Strategy (formerly known as the Industrial College of the Armed Forces). While they have different

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cultures at the institutional level, they share some common challenges and opportunities. This article examines some of those challenges from the perspective of an administrator, a voice that is often missing from the current dialogue, which seems to be dominated by journalists, bloggers, and civilian professors who do their work at the uncomfortable intersection of academic and military cultures.[2]

This submission represents a friendly critique submitted by one who benefited greatly as a student and then, after completing a fully funded doctoral program, as a faculty member. This perspective is informed by 6 years as a faculty member and a course director for two segments of the core curriculum at the U.S. Army War College, followed by an equal time as a civilian faculty member at a doctoral-degree conferring university and now as an administrator. Even with an admittedly favorable viewpoint, it is not hard to see that there is room for systemic improvement. After a brief review of contemporary critiques focused on the war colleges, the article turns to some observations from an administrator's perspective.

War Colleges under Fire

Former *Washington Post* journalist and author Thomas Ricks launched a public salvo against the war colleges in a series of *ForeignPolicy.com* blogs where he actually called for their closure, describing them as both expensive and second-rate. While his criticism is sometimes hyperbolic and tends to be disregarded by those within the system, he raises some good points and serves as a watchdog of sorts as evidenced by his recent accounting of personnel changes that resulted in the reduction of civilian professor positions at the Army War College.[3]

Douglas Higbee provided a useful critical anthology from authors ranging across the system of professional military education.[4] Daniel Hughes's depiction of the Air War College in that edited volume was strident in highlighting a nasty strain of anti-intellectualism, ultraconservatism, Christian nationalism, and a largely disinterested student body.[5] While some might reject the observations of an outsider such as Ricks, Hughes served for 18 years at the Air War College, thus providing an insider view. Some might be inclined to dismiss him as a disgruntled former employee, but regardless of his motivation, there is cause for concern if his observations have any merit.

Robert Scales, a retired two-star general and former commandant of the Army War College, raised an alarm by observing that the military could become "too busy to learn."[6] His essay did not address the war colleges specifically except for noting that the average age of attendees has increased from 41 to 45, making an expensive educational experience more of a preparation for retirement than a platform for leadership at higher levels. He decried the wane of experienced officers as instructors in the system of PME. His critique echoed some of the concerns voiced by Ricks when he suggested that a bias for action over learning and an organizational malaise in the schools have made them an "intellectual backwater." His solution is to change the military's reward system to elevate soldier-scholars rather than denigrate them. He advocated a return to the day when uniformed officers rather than civilian instructors and contractors are assigned to the schoolhouse, not because their careers are at a dead end, but as career-enhancing assignments on the way to even higher levels of responsibility.

In an especially helpful and recent book, Joan Johnson-Freese examines the war colleges and succinctly captured what she terms "overriding institutional and cultural issues" that hinder the accomplishment of their educational goals.[7] A military penchant for training over education, counterproductive clashes between military and civilian culture, student attitudes, administrators who lack experience in running educational institutions, short-term contracts for civilian faculty, administrative bloat, and lack of faculty control of the curriculum all make her list of detractions. She is an insider who served on the faculty of the Air War College and Asia-Pacific Center for Security Studies and is currently serving at the Naval War College. She rightly points to areas where the war colleges excel, and because of the level tone of her work, she is much harder to dismiss than some others who have contributed to the topic.

Comparing PME to Civilian Higher Education

It is important to note that comparing the war colleges to traditional civilian graduate institutions is a bit of an "apples to oranges" exercise. The best graduate program at a top-tier university would, in many respects, be a poor substitute for what should happen at the war colleges. The model for the war colleges is much more akin to that of a professional school (for example, law or medicine) where sophisticated craft knowledge is blended to a lesser degree with disciplinary forays more common to colleges and universities. The war colleges are not designed to produce scholars and researchers; they develop operators and leaders, albeit with knowledge and skills that are sometimes derived from graduate-level education. The adult learning model, seminar method, use of case studies contextually appropriate to a unique group of experienced practitioners, and the many opportunities to engage in no-holds-barred professional discussions with a parade of flag officers and civilian officials are bright spots that should not be underestimated for their positive impact on future senior military leaders. It is vital to have a place where military officers can delve deeply into the nuances of their profession and most importantly plumb the tensions, intricacies, and limitations of operating a large standing military in a democracy. If done properly, that very process can serve as a crucial protection of the Republic. Uninformed and undereducated officers who control vast amounts of military power can fall, or be led, into serious mischief.

Here is a dirty little secret we should consider as we seek the goodness that resides in our comparison group of top-tier civilian universities. Great and sometimes inordinate emphasis is placed on research and publication, which can detract from effective teaching. The ability to conduct

research is a strong motivator for first-rate faculty members who wish to be tenured. Good teaching, however, is not usually that high a priority, especially at research-focused universities. Faculty members savor the discretionary time to pursue their own interests and require even more time to locate and complete extensive and complicated applications for grants to fund that research. There is often a much lower emphasis on high-quality teaching. The drive for tenure and how to achieve it consumes the attention and energy of junior faculty members, generating great stress. While most tenure evaluation schemes include teaching, scholarship, and service as elements of review, few are denied tenure due to mediocre teaching evaluations or lack of service on university committees. Research and publication are the long poles in the tent. Having firmly established the primacy of research through the socialization process, the more successful faculty members are, the less they will be seen in a classroom. Teaching assistants take up the slack. Despite the prestige of some civilian colleges and universities, many teaching practices there are not particularly effective.

Tenure is a double-edged sword. The PME system does not seem to recognize its importance in recruiting and retaining high-quality faculty members. Tenure is the brass ring of a budding academic career—a designation that delineates the serious academic from the part-timer—the professional from the amateur. A colleague recently suggested that no self-respecting competitive academic would be willing to join the faculty of an institution that did not offer tenure unless the rate of compensation and likelihood of contract renewal were so high as to offset the attendant loss of security. Short-term contracts subject to renewal at the whims of nonacademics and the vagaries of a vacillating defense budget are no way to hire the best and brightest. There is also a relationship between tenure and academic freedom. Those who cannot be fired for their opinions as long as they are expressed within the norms of responsible academic practice can become effective and useful gadflies. The lack of such protection can have a chilling effect on speaking truth to power,[8] a role the war colleges might well serve.

Having noted the necessity of tenure or a tenure-like system for both academic freedom and talent management, we ought to also take notice of the other edge of the sword. The accounts of abuses by senior faculty members who are protected by tenure but are unproductive or simply uncivil in their practices are legion in higher education.[9] Indeed, there are opportunities for post-tenure review at some institutions or triggered reviews prompted by serious misconduct, but they are rare and a great deal of poor practice is tolerated before consideration is given to initiating them. Behavior is routinely tolerated in the system of civilian education that would invariably and justifiably involve contract termination or nonrenewal in the PME system.

Faculty Talent Management

It is appropriate to focus on the concept of academic talent management because of the centrality of the quality of the faculty to the effectiveness of any educational institution including the PME system.[10] This concept seems to be lost on some administrators in military organizations. That is understandable in a system where Servicemembers are easily exchanged or replaced and the personnel system routinely generates replacements for vacancies on demand. Servicemembers engage in permanent change of station moves regularly, and the kind of personnel churn that would debilitate most educational institutions is accepted as routine. No one person is irreplaceable in a military formation, and it is unknown when another might become a casualty. Attracting and retaining academic talent, however, is a competitive sport that the PME system plays at significant disadvantage. Hiring and retention are also some of the most important activities an administrator engages in. Recent experience as the chair or member of several search committees for both junior and senior faculty positions provokes reflection on the differences when one is recruiting academics. Let us briefly examine seven ways the PME system is disadvantaged in the marketplace for academic talent in addition to the issue of tenure: access to outside employment, compensation, copyright restrictions, quality of infrastructure, ability to teach in an area of expertise, faculty governance and curriculum oversight, and hiring practices.

Access to Outside Employment. In the Federal system, outside employment is either prohibited outright or significantly constrained by 5 C.F.R., Part 2635, Subpart F.[11] At the very least, permission must be obtained ahead of time and in some cases an ethics finding from an attorney is advisable. University and departmental policies on outside employment vary as do practices by discipline, but many professors significantly augment their salaries through consulting or additional teaching. In many civilian schools, outside employment is not only permitted but also encouraged as a means of expanding the reputation and reach of the institution. Faculty members are permitted to engage in outside employment without restriction provided they give first priority to their university duties. Since professors are not expected to be in their offices on a daily basis, faculty members who strategically construct their teaching schedules can build a lucrative consulting practice. Because they are serving 9-month contracts, faculty members have time in the summer to pursue outside work or consulting. Faculty members who choose to teach courses during summer months or teach more than their assigned faculty load are paid a healthy stipend. Moreover, at civilian institutions, if faculty members are asked to perform additional work beyond their contractual teaching load, such as providing presentations or workshops, they are paid extra, usually in the form of a stipend or honorarium. Howard Wiarda reports being frequently "tasked" to give lectures beyond the terms of his contract at the National War College.[12] It would not occur to most administrators of military educational facilities to provide additional stipends on top of salary for such activities.

Compensation. The war colleges place emphasis on pay equity across

departments with allowance for seniority. In one sense that is appropriate since instructors are doing the same kinds of daily work. While Federal pay scales look generous in some fields (for example, history and the humanities), in other fields they are not nearly as attractive. At civilian universities it is accepted without question that management professors in the school of business will receive much higher salaries than history professors in the college of arts and sciences. That holds true within interdisciplinary departments as well. A professor who comes from the field of public policy will be paid more than one who comes from education even though they are working in the same department. Civilian institutions sometimes find creative ways to compensate faculty members beyond salary. Home-buying assistance, noncontributory retirement plans, mass transit assistance, reduced teaching load, and tuition remission for family members are but a few examples.

Copyright Restrictions. The application of copyright rules varies by Service and interpretations vary by legal advisor, but the general rule is that materials produced by employees of Federal agencies are considered to be in the public domain and are not subject to copyright protection. Work that is prepared by an officer or employee of the U.S. Government cannot by copyrighted in accordance with Chapter 17 U.S. Code § 105.[13] A conservative interpretation of this statute can have a retarding effect on scholarly publication. Most scholarly journals will only publish on the basis of copyright ownership that is conferred by the author. Faculty members in the PME system have in some cases gone to great lengths to establish that their published works are not works of the government. They will work at home on personal computers and assiduously avoid materials or resources that could be construed to be part of their government work. In some cases, there is institutional winking going on around this subject since publishing enhances the prestige of the institution. None of this is an issue in civilian academic institutions. Research funded by university grants, or inherently part of classroom or scholarly effort, is fully subject to copyright by the civilian professor. Academic publishing is not particularly lucrative, but royalties from published works can augment salaries.

Quality of Infrastructure. A good number of the facilities in the PME system, at least as far as the war colleges are concerned, are aging, retrofitted, and in some cases overstuffed. Many of the faculty members share offices or cubicles. For military personnel who have spent significant time deployed or in the field, such accommodations are nothing to complain about, but the quality of facilities is an element of the larger issue of work environment and quality of life. College campuses vary along a spectrum from functional to beautiful, but it would not be hard to assert that civilian colleges and universities have an edge in this category. Faculty members at the Army War College shared small offices with other faculty members. Consultations with students involved whispered conversations or gracious exits by office mates.

Ability to Teach in an Area of Expertise. Many academics are specialists. They strive to become experts and develop a deep level of knowledge about something. That something might change over time, and their breadth of knowledge might expand, but good academics work hard to establish and maintain a strong foundation in disciplinary knowledge. Entire academic careers are made on niche knowledge that can be arcane in some cases but valuable for its depth in others. Former dean of the Army War College Jeffrey McCausland once sagely suggested that the first loyalty of academics is to their disciplines. My economist colleague can always be counted on to advocate for what that discipline brings to the scholastic table, and another colleague who has built a career in K-12 education speaks forcefully for that program.

Now imagine a new teacher arriving at a war college to find out he is to teach subjects far outside the boundaries of his discipline and, in fact, the only time he would have the opportunity to teach in his beloved area of expertise is during an abbreviated elective period. A personal example might illustrate the point. I graduated with a Ph.D. in public policy analysis and administration, a subject I came to appreciate and enjoy. My teaching duties largely centered on three elements of the core curriculum: the first block addressed cognitive skills associated with strategic thinking, the second was oriented to strategic leadership, and the third focused on defense systems and processes such as Department of Defense budgeting, force management, and acquisition. While I came to thoroughly enjoy the first two blocks and loved teaching in general, I detested the block of instruction on defense processes. While such processes are arguably important and something that senior military leaders should understand (points that are continuously drummed into the heads of the students who were not particularly enthusiastic about the subjects either), they were outside my range of expertise and my boundaries of interest.

Faculty Governance and Curriculum Oversight. The war colleges place inordinate emphasis on the curriculum that is derived largely from the top down. At most civilian universities, the curriculum belongs to the faculty. There are processes for faculty voice and indeed veto when it comes to new programs and courses, course modifications, and cancellations. Faculty control of the curriculum is a jealously guarded prerogative that can frustrate administrators. Administrators have an important role, especially regarding resource considerations and limitations, but getting heavy handed with curricular issues is a pathway to a vote of no-confidence from the faculty, a concept that is foreign in PME. There are advantages to this kind of bottom-up system. It is easy to argue that those who are experts in their fields ought to control the content of their courses. It can admittedly also be a recipe for stagnation and immunity to necessary change. While there is a variable amount of faculty voice in the curriculum at the war colleges, it is remarkably diminished in comparison to many civilian institutions of higher education. The war colleges serve one customer, the Department of Defense, and responsiveness to the needs of that

customer drives top-down processes such as joint PME accreditation standards and demands from the joint and Service staffs that compete with what the faculty might see as good educational practice. Faculty voice is muted in the PME system as evidenced by an absence of the organs that provide the means for involvement, such as faculty senates or assemblies.

Hiring Practices. Quite frankly, the hiring practices of most civilian personnel offices are slow, bureaucratic, and sometimes unfriendly. When preparing to retire in 2007, I sent an application for an open faculty position to a PME institution. My first contact from it was over 90 days later when I received an email telling me that a relocation allowance would not be provided. By the time I received that notice, I had interviewed at several civilian academic institutions and already accepted an offer of employment. In contrast, when my institution opens a faculty search, it becomes a personal matter. We send letters and notices to individuals we think would be a good fit and court them. When they visit our campus, we wine and dine them and reimburse their expenses, if they have any that we have not already covered, without requiring forms and signatures from the candidate.

Hiring decisions involve a great deal of faculty voice in civilian institutions. The search committee, composed of faculty members from across the school and a student representative, screens applications, manages campus visits, and makes a recommendation for hire only after every faculty member who chooses to comment has that opportunity. Students give input on the quality of the candidate's teaching presentation and staff members are queried as to their experience with the candidate. If the position involves a senior faculty candidate who already has tenure at another institution, the Appointment, Reappointment, Rank, and Tenure Committee reviews candidate qualifications and makes a recommendation for or against the award of tenure before the dean, in consultation with the provost, makes an offer of employment. The dean of the school conducts the final negotiations and extends the official offer in consultation with the provost.

If going head to head with a war college in a competition for an accomplished civilian faculty member, the contest would likely be decided after a discussion about tenure alone, but if the potential faculty member were not convinced, the discussion could turn to these seven points. The war colleges can attract a form of second-tier academic, the kind who teaches well but fails the tenure review because he lacks a record of meaningful scholarship. After all, the war colleges are not much interested in research or scholarship. Wiarda states it succinctly: "The National War College places almost no emphasis on research. It honors research and publication in the breach, in theory, but it sees no relevance for the research that the faculty does to its primary mission, which is teaching."[14] War colleges sometimes have a department that focuses on publication, such as the Army's Strategic Studies Institute, which is staffed with talented authors who produce insightful opinion pieces and geopolitical essays, but few teaching faculty members are supported, encouraged, or rewarded for engaging in the kind of scholarly work that would be expected as terms of employment at most colleges and universities.

Yet the war colleges do manage to attract some outstanding civilian faculty members including those who are research and publication oriented. The frustrations experienced by these academics have been well explored in the works of Johnson-Freese, Wiarda, and Higbee. To give some balance to the other side of the coin, let us consider some of the reasons why a civilian faculty member might gravitate to the PME system. Some are attracted by the location, perhaps because they have family in the area, a consideration that becomes more important with senior faculty members who have paid their academic dues and are in a position to relocate. Faculty members in the PME system are spared the pernicious nature of the grant economy that drives the pursuit of funding, which is highly sought after by universities but is also a distraction to those more oriented to providing a quality classroom experience than to funding research projects. Others might be drawn to the subject matter. For those interested in national security and especially the military, the war colleges provide privileged inside access that is unequaled in most colleges and universities. Some will be attracted by the opportunity to work with military officers and their Federal workforce counterparts. Working with such dedicated professionals can be rewarding, especially for those who enjoy working with adults. While academic life in colleges and universities can be removed from practice, the connection to real-world problems and the obvious relevance of a war college classroom can be quite motivating. We should not underestimate the social wage that comes from making a contribution to national defense. It can be gratifying to have a role in shaping and developing the next generation of national security leaders.

Academic Leadership

Those who focus on leadership in their teaching and scholarship are likely to agree that leadership is an important variable in the quality of PME. The Services have made both inspired and poor choices in selecting those who serve as executives of their war colleges. Context matters, and leadership success in one type of organization does not necessarily translate to success in another.[15] This suggestion runs contrary to the military personnel system, which tends to regard senior officers as interchangeable. Selection for flag rank is not sufficient qualification on its own to serve as a college president, even a war college. Neither should it be a consolation prize for those who are not selected for combat command. The same goes for other lesser administrative roles as well. Successful completion of brigade, ship, or squadron command does not inherently qualify a person to be a vice president, chief of staff, provost, dean, or department chair. Such key positions of influence would benefit greatly from an understanding of the kinds of tensions that Hughes and Johnson-Freese identify. Demonstrated ability in academic settings should be a prerequisite for service in executive roles at the war colleges. Selectees should be deeply attuned and dedicated to the

primary purposes of the institutions they lead. They should also be incentivized to speak and act fearlessly by making it understood that they are in their terminal assignment for an Active-duty officer or on a specified term for a civilian. In that way, they would have no favor to curry with others, including superiors, as they would not be eligible for promotion to higher grades.

Most war college executives come to their positions with a successful military career behind them and little to no experience in operating academic institutions. Wiarda suggests that they have a deep fear of losing control to the faculty and a military inferiority complex that spawns controlling behavior. He further asserts that such behavior serves to disguise an inability of most military officers to succeed in a nonmilitary environment. That is a harsh indictment that belies the experience of a number of former military officers who are now successfully leading academic institutions, but his hypothesis on the fear of loss of control has some merit. Most Active-duty officers assigned to the war colleges are there for a short time compared to the civilian faculty. They can kick up a great deal of institutional dust that is unproductive in the short term and exhausting in the long run. Both civilian faculty and staff who are in it for the long haul can become adept at appearing to comply while engaging in subtle resistance that waits out the "temporary help" at the top.

The recent firing of the president and provost at the Naval Postgraduate School (NPS) is worthy of examination.[16] NPS is not a war college. It is designed to provide advanced degree opportunities for more junior officers than those who attend the war colleges, but this case raises some issues that apply to other PME institutions. The first sentence of the third paragraph of the cover letter to the Navy Inspector General Command Inspection report speaks volumes: "The overarching problem . . . is that NPS chooses not to follow governing Navy rules, regulations and laws in the conduct of the majority of its programs, because it will not reconcile its academic philosophies and ideals with the governing standards."[17]

National Defense University President MG Gregg F. Martin addresses NDU Class of 2013 during convocation ceremony on front steps of National War College (NDU/Katie Lewis)

The report assumes that academic philosophies and ideals can be made to reconcile with Department of the Navy (DON) standards, and that is an assumption that can be questioned. Later in the same report, the Inspector General notes, "A consistent theme from the highest level of NPS leadership to the lower ranks of the faculty was that NPS cannot operate as a Navy command (and adhere to DON programs and procedures) because doing so would be in direct conflict with the business practices that are necessary for operating a university."[18]

It would be a reasonable interpretation of the report to suggest that the Inspector General saw an institution that had become too civilianized, academic, far out of compliance with Navy regulations, research oriented, and insufficiently focused on the *training* of naval officers. The report attributed the

autonomy given to the institution and a lack of Service oversight as a causal factor. If seeking evidence of the "military mind" that Wiarda asserts has hold over the PME system, we need look no further than the verbiage in the inspection report.[19]

The Naval Postgraduate School, despite being a reputable academic institution that was found by at least one accrediting body to serve as an example for others, was out of compliance with a series of rules designed to regulate naval commands. In a number of areas where the institution showed innovation, such as the expansion of programs to serve other nonmilitary Federal agencies, research initiatives, and hiring practices that circumvented a flawed civilian personnel system, the Inspector General saw outright violation of regulations, questioned the statutory authority, or asked whether the school should even be engaging in those activities. It is too early to tell what the Navy's response will be outside of the firings, but it might serve as a bellwether for the larger question of whether it is practicable to operate an institution of higher learning inside the confines of military structure.

In the case of NPS, the president was a retired admiral who had deep knowledge of the larger Navy. He was not an academic by training or experience and had a lifetime of knowledge about the inner workings of the Service, yet he saw compliance with governing Navy rules as problematic when attempting to operate a world-class school. The Navy apparently has not taken the time and effort to craft specific rules that are appropriate for operating an educational institution. Even if they deserve such exception, the schools are a mere drop in the overall force structure bucket. Instead, NPS is expected to operate under the same regulations as an aircraft carrier. The same could be said of the other Services. From an academic standpoint, the war colleges tend to benefit from a form of benign neglect as far as attention from higher headquarters is concerned. As the president and provost of the Naval Postgraduate School have learned, there is a price for pushing the boundaries of such neglect too far even if the intent is to achieve academic excellence.

Johnson-Freese notes that it is not feasible to close the war colleges and move officers into academic programs in civilian colleges and universities. Not only are there insufficient spaces in existing academic programs, but also some officers are just not that competitive for admission to the kind of top-tier programs the military would want them to attend. Colleges and universities are not nearly as enamored with operational experience and demonstrated tactical performance. Prior academic achievement as reflected by grade point average and Graduate Record Examination scores is likely to factor into the admissions process for most civilian institutions. Reforms that address regulations and personnel practices that systemically limit the war colleges from reaching their full potential are better courses of action. An examination of some of the inhibitors to academic talent management listed in this article would be a good start.

The war colleges really should be, and indeed could be, intellectual centers of excellence with a mix of the best and brightest military and civilian faculty members. They have the potential to serve as incubators of big and even disruptive ideas fueled by cutting-edge research on important and relevant questions and dedicated to preparing high-potential senior military officers for the great challenges of our age. In return for the investment of national treasure that goes into operating the war colleges, the American people and indeed the Servicemembers who will serve under their graduates deserve far better than mediocre. **JFQ**

Notes

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[13] See Chapter 17 U.S. Code § 105: Subject matter of copyright: United States Government works, available at <www.copyright.gov/title17/92chap1.html#105>.

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[15] Frank Hamilton and Cynthia J. Bean, "The Importance of Context Beliefs and Values in Leadership Development," *Business Ethics* 14, no. 4 (October 2005), 336–347.

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DOD's first production F-35B Lightning II joint strike fighter flies toward its new home at Eglin Air Force Base, escorted by Marine Corps F-18 Hornets (U.S. Air Force/Joely Santiago)

Putting "A Cooperative Strategy for 21st Century Seapower" to Work

A Wargaming Perspective

By Jeffrey M. Shaw

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A Cooperative Strategy for 21st Century Seapower proposes that the maritime forces of the United States will "join with other like-minded nations to protect and sustain the global, inter-connected system through which we prosper."[1] In addition, the United Kingdom's Royal Navy has declared that international engagement is "a powerful tool in delivering longer term conflict prevention" and is one of its three key roles.[2] There is little doubt that the United States and the United Kingdom (UK) will operate side by side in future contingency operations. The War Gaming

U.S. and Brazilian naval officers provide inputs to multitouch, multiuser interface during 2013 Inter-American War Game (U.S. Navy/James E. Foehl)

Department at the U.S. Naval War College sought to improve mutual understanding between U.S. and UK operators and planners in conducting combined operations in a future maritime environment. From January 14 to 18, 2013, participants from the U.S. Navy, Marine Corps, and Air Force met with officers from the Royal Navy, Royal Marines, and Royal Air Force in Newport, Rhode Island, to examine ways to operate effectively together in the future. It is imperative that ideas that emerged from the exercise are shared with senior officers from both the United States and the United Kingdom so steps can be taken to ensure that their fleets can act jointly toward a common objective.

The purpose of any wargame is to "provide military commanders with both decision-making experience and decision-making information that will be useful in real-world situations."[3] The weeklong event in Newport provided plenty of information for participants to consider regarding the combined employment of U.S. and UK maritime and air forces. Participants identified three overarching areas that warrant further investigation to facilitate operating as a combined force, which in the context of this game is referred to as "a military force composed of elements of two or more allied nations."[4] These areas are doctrine, communication and information systems (CIS), and cultural constructs to include rules of engagement (ROE) and political will and authority. In addition to these three areas, players demonstrated an overall lack of familiarity with the Air-Sea Battle (ASB) concept, which while not the focus of the game deserves to be addressed.

Doctrine

Doctrine is defined as the "fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives."[5] *Multinational doctrine* is further defined as principles applicable to guiding the forces of "two or more nations in coordinated action toward a common objective," which is then "ratified by participating nations."[6] The wargame identified three specific areas that deserve attention: F-35 and aircraft carrier (CV) operations, mine countermeasures (MCM), and the employment of special operations forces (SOF).

The F-35 and the Royal Navy CV to be launched in 2016 present an opportunity for interoperability with U.S. forces. For the first time, the U.S. Air Force, Navy, and Marine Corps, along with the Royal Air Force and Royal Navy, will employ the same airframe. The F-35 is arguably the last manned aircraft, and as such it would be worth pursuing as much commonality as possible in training and employment. Liaison officers are the most effective option for ensuring standardization in training, tactics, and procedures. From a training perspective, flight simulator interconnectivity could promote standardized flight procedures and tactics.

Players from the UK indicated that it may be too late to garner the advantages of true interoperability between U.S. and UK F-35 pilots because many procurement decisions for items such as communications hardware and transponders have been made without regard for commonality with U.S. platforms. However, with some effort in the short term, to include renewed emphasis on ensuring the placement of liaison officers and identifying areas for standardized training, it might still be possible to reap at least some interoperability advantages from one of the most expensive weapons procurement programs in history.

There are significant challenges ahead as the Ministry of Defence integrates its new aircraft carrier, HMS *Queen Elizabeth*, into its national security strategy. The UK strategic defense review in 2015 will help clarify this issue; however, it is not too early to begin considering ways to maximize interoperability between Royal Navy and U.S. Navy pilots. Having HMS *Queen Elizabeth* available in a future contingency environment is itself a tremendous advantage, but pursuing ways to allow the ship to be used by both UK and U.S. assets will only increase its usefulness. It is also not too early for Royal Navy operators to consider ways to more effectively operate with the Royal Air Force. According to UK players, there is plenty of work to do in this arena.

Mine countermeasures "reduce the threat and effects of enemy-laid sea mines."[7] This is an area in which the Royal Navy could provide valuable assistance to U.S. forces. The Japanese Maritime Self Defense Force supported the U.S. Navy during Operation *Enduring Freedom* by providing oil tankers to refuel U.S. ships. Identifying this type of niche capability, whether refueling or mine-clearing, could be the most effective way for forces from two nations to operate together toward a common objective. To standardize MCM operations, assigning liaison officers between the Royal Navy and the U.S. Navy is a good first step. The identification of common training practices is also important.

Players indicated that U.S. and UK tier 1 SOF already have the ability to operate closely together at the tactical level. It would be worth examining their procedures to determine the optimum way ahead for enhancing interoperability between other forces and capabilities, such as the F-35 and MCM assets.

Communication and Information Systems

The term *communication and information systems* is used by the UK armed forces and was adopted by game participants to encompass elements relating to the ability to communicate and share information between U.S. and UK forces acting together. Players noted that one of the most pressing communication issues facing combat forces is *combat identification* (CID), "the process of attaining an accurate characterization of detected objects in the operational environment sufficient to support an engagement decision."[8] In addition to CID, the ability to share ballistic missile defense (BMD) information and operating effectively together in the cyber and space domains were noted as areas needing attention.

The ability to accurately distinguish whether a detected object is friendly is complicated when operating with forces from a partner nation. It is imperative that common architecture be identified, procured, and employed to prevent fratricide. Combat identification can also be enhanced through the establishment of shared doctrine. This is an area for future study and experimentation, not only regarding combined operations involving the forces of two nations. Identifying appropriate training, equipment, and doctrine to ensure proper CID within the branches of the U.S. Armed Forces must also continuously be pursued, as too many "blue-on-blue" events over the last few decades have shown.

BMD interoperability is another important area of concern, especially with the emergence of the ASB concept. As U.S. and allied forces operate within the threat envelopes of advanced missiles, it is imperative that our forces have the capability to share information that enhances survivability. In light of recent events in North Korea, BMD is important across the board, whether dealing with allies and partners or from the joint operations perspective within the U.S. Armed Forces. It is also within our interest to ensure that our allies can conduct successful BMD operations on their own.

Cyber and space operations will affect everything from the ability to command forces at the tactical level to the ability to formulate and communicate political resolve at the highest levels of government. The full implications of cyber and space have yet to be realized. The Chairman of the Joint Chiefs of Staff has indicated, "The relevance of space and cyberspace to national security will grow exponentially in magnitude of importance."[9] One way for the U.S. Navy to address this looming issue is to continue to "educate the next generation of cyber officers at the U.S. Naval Academy, Naval Postgraduate School, and Naval War College."[10] Other Services will also want to examine ways they can train and deploy cyber officers. It is hoped this cadre of highly educated officers will include not only members of the U.S. Armed Forces, but also officers from the armed forces of our allied and partner nations. The importance of cyber was summed up succinctly by former U.S. European Command Commander Admiral James Stavridis in 2012: "We hear a lot about strategic communication. Strategic connection is bringing together international, interagency, private and public [groups] to address very complex problems, and I will put cyber at the top."[11]

A final CIS point to consider is that both U.S. and UK players indicated that too often information is classified at a higher level than necessary. To ensure the free flow of important information to the commander, as well as between forces and from those forces back up the chain of command, perhaps "unclassified" should be the default; otherwise, we help the enemy keep information out of the proper hands, making his job easier.

Cultural Considerations

Players noted that ROE and political will and authorities were two key cultural considerations that can affect combined operations. Differences in culture cannot be "fixed," so the challenge is to identify what they are and then find ways to work within and around the differences. Perhaps this issue affects U.S. military personnel more than our allies and partners. Addressing this issue, Admiral Stavridis indicated, "As opposed to many of our European partners, who effortlessly speak four or five languages and have a deep knowledge of each other's background and culture, we in the U.S. are failing to fully train and prepare for this kind of international work. . . . This is an area in which we have much work to do."[12] This issue has been recognized and addressed throughout the Department of Defense (DOD), and individual Services have sought various ways to remedy this deficiency.

Many players believed the United States and the United Kingdom are not far apart on political issues, and recent events seem to indicate that at the higher levels of government, this is probably the case. For example, an examination of current events demonstrates that the United States maintains the ability to work closely with partner nations at short notice. Steven Erlanger's article in the *New York Times* on January 20, 2013, noted that the United States and France are collaborating in Mali, sharing intelligence that was garnered from drones and other

means. Problems associated with interoperability seemed to be less evident at the strategic level and more pronounced at the operational—and especially at the tactical level, according to both U.S. and UK players. Similar consistency at the highest policy levels will be required for the United States and UK to achieve mutual objectives. To ensure that both nations are able to operate with similar ROE, the International Law Department at the Naval War College would be the perfect forum within which to begin examining this important topic.

The majority of players indicated that by operating together, the United States and the UK would be more likely to gain international legitimacy. While players correctly noted that identifying areas in which political objectives will need to be aligned, the game focused more at the operational level of war. It is at that level that commanders will need authority to act. Therefore, if the United States and UK hope to work side by side, or as an integrated force, the authority to act as necessary to accomplish the mission will need to be clearly articulated from the civilian leadership down through the chain of command. These authorities must be coordinated between governments so combined forces have the ability to pursue the same objective in the same manner if the operational commander is to accomplish the mission.

While operating together toward a common objective has the potential to provide greater political legitimacy, caution is warranted for two reasons. First, it may be enough simply to have forces in the same theater of operations, demonstrating resolve through presence. Having Royal Navy and U.S. Navy aircraft sharing a carrier flight deck or engaging in MCM operations side by side may not be required to demonstrate both nations' resolve. It is incumbent on the combatant commander to determine the optimum level of interoperability that will provide the greatest leverage in any given contingency, and the participants in the wargame provided plenty of examples as to when the commander should, and equally important, should not seek to operate forces together at the tactical level. Second, the bottom line regarding political legitimacy is that the objective, not the number of nations aligned together attempting to achieve the objective, will determine the degree of legitimacy seen on the world stage. It is unlikely that anyone other than al Qaeda will condemn France for intervening unilaterally in Mali. Likewise, Egypt's 1973 surprise attack against Israel did not achieve greater legitimacy simply because Syria chose to join them. Hence, the "we have a partner, therefore our objective is legitimate" mentality should be taken with a grain of salt.

Air-Sea Battle

Although this particular game was not designed to examine ASB, players were questioned about their familiarity with this emerging concept. By a wide margin, both U.S. and UK players noted a general lack of familiarity with ASB. This is problematic, especially if this concept continues to drive U.S. Air Force and Navy funding and acquisition priorities. Perhaps it is time to consider the statement made by Representative Randy Forbes (R-VA), the Chairman of the House Armed Services Readiness Subcommittee:

There is still a broader misunderstanding amongst the press, think tanks, and international observers of what Air Sea Battle actually is and is not. This stems from a struggle by the Navy and Air Force to explain the concept, its purpose, or the role of the Air Sea Battle Office. The classified status and diplomatic sensitivities surrounding Air Sea Battle are partially to blame.[13]

This comment demonstrates that the U.S. military needs to not only try harder to communicate in the unclassified domain, but also to present a strategic communication message geared toward its own people and government in explaining what ASB is and why the Nation needs it. Until the military can clear this relatively low hurdle, it is unlikely that the U.S. Armed Forces can operate effectively either as a joint force or with allies and partners.

According to the Dean of the Center for Naval Warfare Studies at the Naval War College, "It is all too easy either to ignore or put a favorable spin on game events or results that do not fit comfortably into existing doctrines or accepted theories," especially when games "generate information that is bureaucratically or politically threatening to players or sponsors."[14] Many players and sponsors associated with this particular gaming exercise may have had a vested interest in the ASB success. Rather than continuing to evaluate ASB at the tactical and operational level, it is incumbent on the Naval War College and the professional military education institutions throughout DOD to examine whether ASB is actually an intellectual construct worth pursuing. Examining the concept was not the object of this game, but "the gaining of knowledge is inherent and unavoidable, whatever a game's object,"[15] and the knowledge gained in this game about the participant's general lack of familiarity with ASB should be acted on. While doing so, it might be worth asking whether the antiaccess/area-denial concept that drives ASB will encourage our fighting admirals and generals to adopt a "George B. McClellan" mindset rather than a "George S. Patton" mindset. That would be problematic to say the least.

Recommendations

Continued study of the issues that emerged from this game is important. Players suggested a number of ideas for how this should be done, with a tactical-level game being the most widely suggested option. The Naval War College's 2012 Arctic game examined a number of set-piece scenarios, the goal of which was to determine whether the United States is properly poised to operate in the Arctic. The advantages of this approach would be to narrow in on specific doctrinal issues, and "as is the case with the global/strategic games, the principal purpose of the tactical games is to give their participants an improved perspective,"[16] which is exactly what many players hope to obtain in the next iteration of this important dialogue.

Another suggested option is to have both U.S. and UK judge advocates general (JAGs) examine the specific ROE that might be employed in future contingencies. Whether through round-table discussions or including JAGs in future games, ROE standardization, to the maximum extent possible, is going to be an important area of consideration. Not only ROE, but information- and intelligence-sharing in general should be discussed in the next setting. Operating together against a near-peer competitor may provide additional options to the combatant commander, but players noted that a significant advantage to combined operations might be found in the ability to use intelligence-gathering capabilities to better determine enemy intent before hostilities occur.

Players identified that a major impediment to operating with international partners is the U.S. tendency to classify information, complicating the crucial flow of important data to our allies as well as within and among our own Services. If the U.S. military hopes to invite international partners to participate in achieving common national security objectives, it is imperative that this problem be corrected—at what level and how is a topic worthy of at least a joint staff round-table discussion.

Finally, an additional consideration planners might consider surrounds interoperability on the part of our near-peer competitors. The United States may benefit, as might the UK, from operating alongside our allies and partners in future contingency scenarios. However, the synergistic effect of a combined approach on the part of our adversaries operating against the United States and its allies deserves closer attention. An attempt to determine which competitor capabilities would be most enhanced through an interoperability approach on the part of two or more potential aggressors would be worthy of its own wargame at any joint professional military education institution.

Conclusion

It is hoped these ideas will generate a number of responses and encourage others to widen the conversation on this important topic. Examining effective ways to operate with our allies and partners should be a priority for the Services and the Joint Staff. How to do this properly is an avenue for further inquiry. What is the role of the individual Service Title X wargaming departments? Should high-level meetings such as the McCain Conference on Ethics include senior officers and policymakers from allied nations? This would allow a wider discussion about employing autonomous or semiautonomous lethal force, concepts that will need to be ironed out prior to deploying with the next generation of unmanned vehicles and drones. Also, how can combatant commanders and their subordinates in the U.S. military operate under the guidance of General Dempsey's Mission Command when dealing with forces from allied nations? Can a commander's intent be made known as readily among forces from other nations as it can within our own military? These and other topics that directly relate to the issues and obstacles the United States will face when operating alongside allied and partner nations will, it is hoped, be addressed in future editions of this journal.

Interoperability between U.S. and UK forces can be enhanced if doctrine, communication/information systems, and cultural considerations can be addressed and overcome. The most important short-term steps to take now are to continue to identify positions in which exchange officers can be placed. Also, the establishment of combined training exercises and examining how ROE can be standardized are of paramount importance. Addressing these issues will facilitate combined operations between U.S. and UK forces as well as combined operations with and between NATO Allies, or other allies and partner nations as expediency demands. The Naval War College, to include the International Law Department and the War Gaming Department, should continue to take the lead on this important discussion so our maritime forces are prepared to meet the Chief of Naval Operations' direction to "support our partners and allies around the world."[17] **JFQ**

Notes

[1] *A Cooperative Strategy for 21st Century Seapower* (Washington, DC: U.S. Navy, U.S. Marine Corps, and U.S. Coast Guard, October 2007), available at <www.navy.mil/maritime/Maritimestrategy.pdf>.

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[11] "Talking with Admiral James G. Stavridis," *CHIPS: The Department of the Navy's Information Technology Magazine*, available at <www.doncio.navy.mil/chips/ArticleDetails.aspx?ID=2420>.

[12] James G. Stavridis, "Stavridis Presses to Close Language, Cultural Skills Gap," TMC News, February 5, 2013, available at <www.tmcnet.com/usubmit/2013/02/05/6904604.htm>.

[13] J. Randy Forbes, *Air Sea Office Must Battle Through, or Fail*, September 13, 2012, available at <http://defense.aol.com/2012/09/13/airsea-office-must-battle-through-or-fail-rep-j-randy-forbes/>. It should be noted that Congressman Forbes's statements were made 3 months after the Air-Sea Battle Office Service leads, Captain Phillip Dupree, USN, and Colonel Jordan Thomas, USAF, published "Air Sea Battle: Clearing the Fog" in the June 2012 issue of *Armed Forces Journal*.

[14] Robert Rubel, "The Epistemology of War Gaming," *Naval War College Review* 59, no. 2 (Spring 2006), 124.

[15] Ibid., 109.

[16] Peter Perla, *The Art of Wargaming* (Annapolis, MD: U.S. Naval Institute Press, 1990), 172.

[17] Greenert.

Marine amphibious assault vehicles maneuver back to USS *Tortuga* at Hat Yao Beach, Krabi Province, Thailand, as part of joint/combined exercise Cobra Gold 2012 (U.S. Marine Corps/Courtney White)

Godzilla Methodology

Means for Determining Center of Gravity

By James P. Butler

What are enemy force capabilities? Where does the enemy derive its strength? What are the enemy's objectives? Combatant commanders are often tasked with identifying which enemy forces will need to be attacked, destroyed, or neutralized in order to achieve established military objectives. These are some of the questions combatant commanders and their staffs need to address in planning military operations.

One of the terms commonly used while conducting an analysis of enemy force capabilities is *center of gravity*. Military analysts and historians commonly refer to a force or capability as the "enemy center of gravity," meaning that this force is of such strength that it will need to be addressed (attacked, destroyed, or neutralized) to achieve the objective of the operation. Although use of this term is common, seldom does anyone offer an explanation for how to determine the center of gravity. How does a military planner or analyst determine the "it"? How does a military commander determine his own center of gravity so he can protect it? This article attempts to identify a methodology for determining centers of gravity.

The term *center of gravity* first appeared in Michael Howard and Peter Paret's translation of Carl von Clausewitz's immortal discussion of warfare *On War*.[1] Clausewitz actually used the German term *Schwerpunkt* to describe "that area where the greatest

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concentration of enemy troops can be found."[2] In the English translation of the book, *center of gravity* is defined as "the hub of all power and movement, on which everything depends. That is the point against which all our energies should be directed."[3] This definition indicates that a center of gravity is not just any concentration of military strength, but the source of strength that must be attacked.

Planners and analysts of modern warfare expend great time and energy analyzing enemy force capabilities to prepare for military operations. Where does the enemy derive its strength? What is the enemy's source of power? Analysis may reveal that a particular leader is the source of power at the strategic level of war or that an elite division or army component is the source of power at the operational level.[4] These sources of power where the enemy derives its strength are commonly referred to as centers of gravity.

Joint doctrine defines *center of gravity* as "a source of power that provides moral or physical strength, freedom of action, or will to act."[5] Joint doctrine also specifies that centers of gravity may be found at all three levels of war (strategic, operational, and tactical) and that they should be nested, meaning the destruction of an operational-level center of gravity should have a major impact on the strategic center of gravity. For example, destruction of an operational-level center of gravity (for example, an elite army division) will impact the strategic center of gravity (the nation's will to fight).

Milan Vego, one of the foremost theorists on operational warfare, emphasizes the importance of identifying the center of gravity and defines it as "a source of massed strength—physical or moral—or a source of leverage whose serious degradation, dislocation, neutralization, or destruction would have the most decisive impact on the enemy's or one's own ability to accomplish a given political/military objective."[6] The value of Vego's definition is that he addresses three key aspects of a center of gravity. First, he identifies the center of gravity as a source of physical or moral strength; he then indicates that this source of strength should be degraded, dislocated, neutralized, or destroyed; and finally he indicates that the purpose of this destruction is to achieve a political or military objective. If one were to look at Operation *Desert Storm* in August of 1990 for an example of center of gravity, analysis would identify Saddam Hussein and his inner circle security apparatus as the enemy strategic center of gravity and the Republican Guard as the operational center of gravity.[7] Although Saddam had multiple critical strengths (for example, an integrated air defense system, land-based ballistic missiles, missile-armed surface combatant ships, and sea mine inventories and delivery platforms) available during this operation, the Republican Guard was the source of power used to achieve his objective of occupying and holding Kuwait. That was the force the allies needed to degrade, neutralize, or destroy to prevent Saddam from achieving his operational objective of defeating or neutralizing the coalition force attempting to liberate Kuwait, which was linked to his strategic objective of retaining Kuwait as a 19th province.[8]

Why Is This Important?

Commanders need to effectively employ their forces in order to enhance their ability to achieve objectives. The strength of forces needs to be applied toward achieving objectives, not wasted on secondary, insignificant actions. Many of the principles of war directly apply in determining the importance of centers of gravity.[9] For example, the commander should direct the operation toward a clearly defined goal (which emphasizes the principle of *objective*). The commander should also concentrate the effects of combat power at the most advantageous place and time (emphasizes the principle of *mass*) and minimize the expending of combat power on secondary efforts (emphasizing *economy of force*).[10] Although all the principles of war can be addressed to varying degrees in this way, their relevance is not as direct.

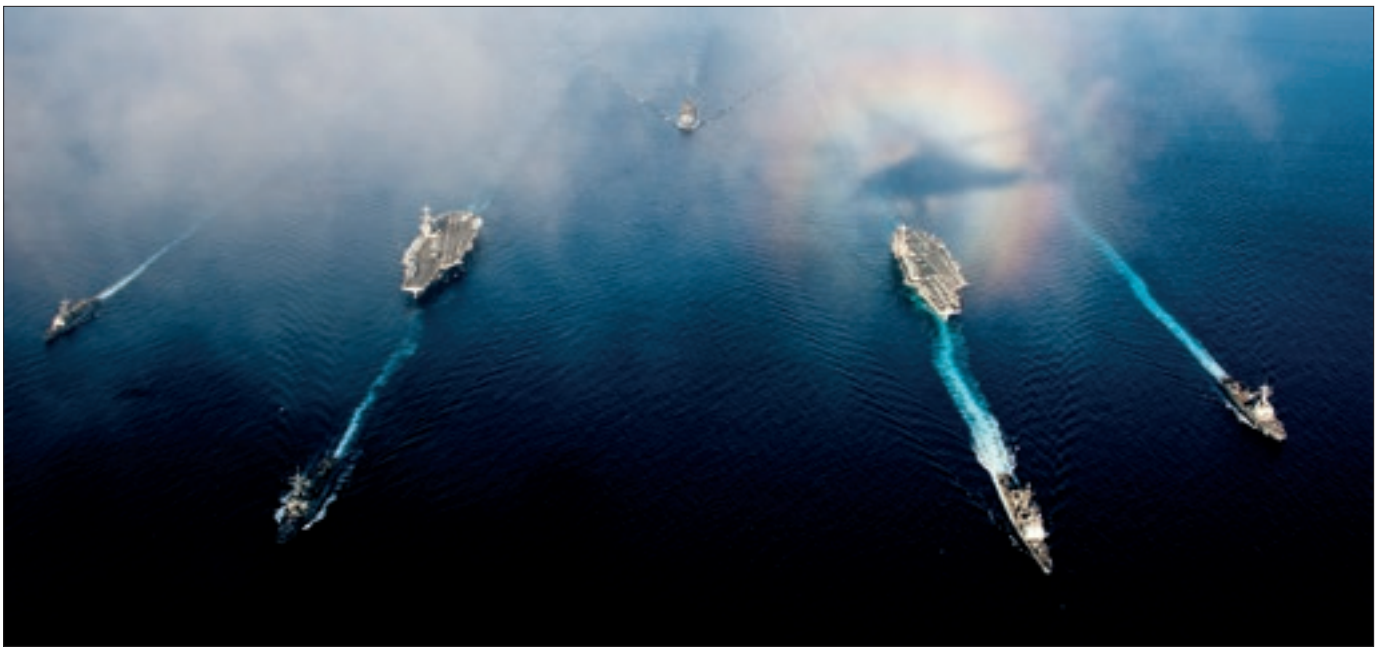
Time is also a critical element in warfare. The efforts of the commander should be synchronized toward achieving the objective in the shortest possible time. To be successful in warfare, commanders need to know what to attack (the enemy center of gravity) and what to defend (the friendly center of gravity). Rapidly attacking the enemy center of gravity may be a determining factor in the outcome of war.

For years, commanders and their staffs have struggled to correctly identify centers of gravity. If an enemy has multiple forces that are strong and formidable, how does a planner determine which one is the center of gravity? For example, enemy sources of strength may include a strong army, superior navy, and formidable air force. Which force should commanders devote their maximum effort toward attacking, neutralizing, or destroying?

Center of Gravity Analysis

In answering these questions, Vego proposes that commanders and their staffs conduct an analysis of objectives and the military situation to determine centers of gravity. The purpose of analyzing the military situation is to determine critical factors, which are things "considered essential for the accomplishment of the specific military objective."[11] Critical factors can be tangible (physical things that can be measured or touched) or intangible (abstract things that are difficult to measure). For example, in measuring the tangible aspects of an army division, one could count the number of troops or tanks or artillery pieces assigned to the unit. Intangible factors of the army division might include a discussion of unit morale, training, or warfighting ability.

In addition to identifying tangible and intangible factors, Vego proposes dividing critical factors into two categories: critical strengths and critical weaknesses. *Critical strengths* are "primary sources of physical or moral potential/power or elements that integrate, protect, and sustain specific sources of combat potential/power."[12] Determination of what forces are critical is based on the good judgment and experience of commanders and their staffs. Elements are deemed critical strengths if they affect or potentially affect accomplishment of the objective. *Critical weaknesses* are sources of power, essential for accomplishing the objective,



USS *John C. Stennis* and USS *George Washington* in Andaman Sea with their carrier strike groups (U.S. Navy/Kenneth Abbate)

that are grossly inadequate to accomplish the mission.[13] At the operational level of war, a force might be considered as a *critical weakness* if it were necessary to accomplish the objective and it was considered to be deficient in some aspect such as mobility, firepower, doctrine, morale, or training. In determining critical strengths and weaknesses, it is essential to keep military objectives in mind. Consideration should be given only to those elements (critical strengths or critical weaknesses) that have some effect on accomplishing the objective.

Continuing to follow Vego's analytical construct, other factors to be considered are those that are vulnerable to attack. Those elements (critical strengths or critical weaknesses) open to attack or exploitation because of some deficiency are identified by Vego as *critical vulnerabilities.*[14] It is often easier to identify elements considered critical weaknesses as critical vulnerabilities because their deficiency may lend itself to the reason the force is vulnerable to attack. For example, an infantry battalion (composed of approximately 850 men) might be considered a critical weakness because it does not possess the ability to defend itself from attack from the air.[15] This same deficiency might lead those conducting the analysis to consider this force a critical vulnerability if the attacking force had the ability to exploit this vulnerability. On the other hand, identification of critical strengths as critical vulnerabilities is often more difficult. Determination of vulnerabilities in elements considered critical strengths is possible, especially if one considers attacking logistic support or sustainment requirements. For example, if a carrier strike group (a naval force composed of a carrier and multiple cruisers, destroyers, frigates, and submarines) is identified as a critical strength, its vulnerability may be its logistic support. Rather than attacking the carrier strike group directly, an enemy might attack this force indirectly by targeting its supply ships.

Having identified critical strengths, critical weaknesses, and critical vulnerabilities, the next step in determining center of gravity is to look at the list of elements considered critical strengths. One of the elements on that list is the center of gravity, a critical strength that is essential for achieving the objective. This is where the analysis could lead to problems and errors—the misidentification of the center of gravity is a common mistake. The center of gravity may not be the strongest or largest force on the critical strength list. Reasoning must be employed to determine which critical strength is necessary to achieve the objective.

How does one know if he has selected the correct center of gravity? Even if one explicitly followed Vego's recommendation for conducting an analysis of force capabilities, one could still select the wrong element on the critical strength list. This could be a costly error if forces were wasted attacking the wrong center of gravity. The Godzilla Methodology was developed to resolve this problem and assist military planners in determining which element on a list of critical strengths is the correct center of gravity.

The Godzilla Methodology

Since Godzilla first terrorized Japan in Ishiro Honda's 1954 film (appropriately titled *Godzilla*), this monster has wreaked havoc on civilizations throughout the world.[16] As a fictional creature born from the fallout of atomic bomb testing in the Pacific, this giant quasi-dinosaur has gained popularity as both a destructive monster and as a hero, a defender of friends.

Godzilla had the power to reach out and destroy antagonist forces and protect friendly forces from harm. For example, as an antagonist, he was depicted sinking ships, downing aircraft, and even destroying cities; as a hero, he was depicted as defending friends from imminent destruction by other mythical monsters.

The basic premise of the Godzilla Methodology is to use this mythical monster to determine which force on the critical strengths list is required to achieve the objective. Godzilla destroys (removes) one force at a time from the list of critical strengths until removal of a particular force prevents the objective from being achieved. When that happens and the objective can no longer be achieved because of the removal (neutralization or destruction) of a particular force, then that force is the center of gravity. The Godzilla Methodology allows planners to identify which force is the center of gravity by comparing forces identified as critical strengths to the objective.

By definition, the center of gravity is a source of strength whose destruction or neutralization would have a decisive impact on the enemy's or one's own ability to accomplish a given political/military objective.[17] Having determined which force is the center of gravity, planners can continue their analysis to determine how to attack (enemy) or defend (friendly) sources of power.

An Example

To illustrate this methodology, Godzilla will be used to determine centers of gravity for a notional Allied amphibious operation in the Pacific during World War II. Looking first at the enemy objectives, Godzilla will support Japanese forces by destroying Allied critical strengths until one is identified whose removal would prevent the Allies from achieving their operational objective. Having determined the enemy (Allied) center of gravity, the Godzilla Methodology will then be used to determine the friendly (Japanese) center of gravity.

The ultimate strategic objective of the Allied forces in the Pacific during World War II was "the unconditional surrender of Japan."[18] The immediate Allied strategic objective was "to obtain positions from which the ultimate surrender of Japan can be forced by intensive air bombardment, by sea and air blockade, and by invasion if necessary."[19] An Allied generic operational-level objective, nested under these strategic objectives, might have been to seize an island in the Pacific in order to establish an airfield, which would be used to facilitate follow-on operations for the island-hopping concept developed during World War II.

Godzilla will defend the Japanese-held island from attack by Allied forces. If the Japanese had conducted an analysis of force capabilities to determine the Allied operational- level critical strengths, they may have identified the following elements: the submarines assigned to commander, Submarine Forces Pacific; the land-based air in the region; a fast carrier force (consisting of aircraft carriers, fast battleships, cruisers, and destroyers); a fire support group (consisting of battleships, cruisers, and destroyers) used primarily for force protection and gunfire support; and an amphibious attack force (composed of cruisers, destroyers, destroyer escorts, escort carriers, transports, cargo ships, landing craft, mine craft, and supply vessels carrying one or more Army or Marine divisions).

Using Godzilla as a destructive force, the Japanese staff officers could have examined this list of Allied critical strengths by destroying one force at a time, and then analyzing the impact the removal of each force would have had on achieving the objective. For example, if the Japanese used Godzilla to destroy all the Allied submarines operating in the region, would that prevent the Allies from achieving their operational objective of establishing lodgment ashore? The answer is no. Considering all the forces that remain on the critical strength list, the Allies could still conduct an amphibious landing and achieve their objective (seizing the island). Thus, the Allied submarines are not the center of gravity. Continuing with this methodology, if Godzilla destroyed all the land-based aircraft in the operational region, would this prevent the Allies from achieving their operational objective? Once again, the answer is no. The Allies could still use their remaining forces to assault and occupy the island. Thus, land-based aircraft should not be considered the center of gravity. Godzilla could then destroy another force, such as the fast carrier force or the fire support group. Would removal of either of these forces prevent the Allies from achieving their objective? Surprisingly, the answer is still no. In fact, it is not until Godzilla destroys the amphibious attack force that the Allied operational objective is prevented. Thus, the amphibious attack force is the enemy operational center of gravity. It is the only force capable of establishing lodgment ashore.

Determining the center of gravity is only one step in identifying how to attack the enemy. After determining the enemy center of gravity, the Japanese staff officers would still have to continue their analysis to determine how to attack it and the other enemy forces identified in the analysis of critical strength forces. For example, the Japanese staff officers would also need to address how to defeat or neutralize the Allied fast carrier force and fire support group. These forces would have been assigned to support and protect the amphibious attack force so the Japanese would have to deal with each of these forces in some way (deception may be used in addition to annihilation) before commencing an attack on the amphibious attack force.

In this example, the amphibious attack force possesses minimal strength during its transition to the amphibious operating area. It has significant potential strength because of the infantry division onboard, but only minimal offensive strength while in transit. This is the fact that causes staff officers the greatest problem when trying to determine centers of gravity. The fast carrier force and fire support groups obviously possess greater dynamic strength, so why are they not the center of gravity? The answer lies with the objective. If the objective is to seize and occupy an island, then the amphibious attack force is the only force that can achieve that objective. This is the only force listed as a critical strength that has the ability to seize and hold territory. Aircraft, ships, and submarines cannot seize and hold territory; only the amphibious forces of the amphibious attack force can do that.

This methodology can also be used to determine the friendly (Japanese) center of gravity. The Japanese strategic objective in the Pacific during World War II was to win a great engagement

Members of 82nd Airborne board C-17 Globemaster III to conduct static line jump during mobility air forces exercise (U.S. Air Force/Jason Robertson)

at sea (decisive battle) with the Allies to negotiate a settlement.[20] An example of a theater-strategic objective may have been to maintain control over a particular geographic region to keep the Japanese sea lines of communication open, their resources flowing, and their territorial expansion boundaries intact. An operational objective may have been to prevent the Allies from attacking this notional island in the Pacific. If Japanese planners were to compile a list of friendly critical strengths (Japanese forces), it would be similar to the Allies, and might include a naval fire support group (multiple types of warships such as aircraft carriers, battleships, cruisers, and destroyers), submarines, land-based air, and an infantry battalion.

In using the Godzilla Methodology to determine the friendly center of gravity, each element on the critical strength list would be analyzed and removed one item at a time until the objective cannot be achieved. For example, if all the submarines in the area were removed, could the Japanese still prevent the Allies from attacking this notional island? Yes, they have other forces that would allow the Japanese to achieve their objective. It is easy to ascertain that the naval fire support group would be the critical strength necessary for achieving the objective of preventing the Allies from seizing this notional island in the Pacific. This is the only force with enough mobility and strength available to attack the Allied forces en route to the island to prevent the landing. The Japanese naval fire support group is the friendly operational-level center of gravity that should be protected. Protection in this example does not mean this force should be held back and hidden from harm, but rather that it should be used in the attack with the support of other forces on the list of critical strengths. For example, the land-based air could be used to provide protection from aircraft attack and the submarines could be used to provide defense in depth for the Japanese naval fire support group as it attacks the Allied center of gravity.

The Godzilla Methodology provides a simple but effective means of identifying centers of gravity. This mythical film figure can be used by commanders and their staffs during the planning process to determine which forces are necessary to achieve military objectives. Identification of enemy centers of gravity allows commanders to focus their efforts on the neutralization or destruction of those forces that have a decisive impact on accomplishing a given political/military objective. The identification of friendly centers of gravity allows commanders to focus their efforts to protect and possibly enhance the capability of those forces necessary for achieving objectives.

If commanders are having difficulty determining which force is the enemy center of gravity, the Godzilla methodology may provide an answer. Without application of this imaginative methodology, planners may make costly mistakes by focusing their attack on the wrong force. Mistakes of this type can lead to catastrophic consequences. **JFQ**

Notes

[1] Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976).

[2] Ibid., 485.

[3] Ibid., 595.

[4] Joint Publication (JP) 3-0, *Joint Operations* (Washington, DC: The Joint Staff, August 11, 2011), identifies three levels of war to distinguish between national objectives and tactical actions. The strategic level is the highest, referring to the employment of the instruments of national power to achieve theater, national, or multinational objectives. The operational level links the tactical to the strategic, and the tactical is characterized as the employment of forces in relation to each other.

[5] JP 5-0, *Joint Operational Planning* (Washington, DC: The Joint Staff, August 11, 2011), III-22.

[6] Milan Vego, *Joint Operational Warfare: Theory and Practice* (Newport, RI: U.S. Naval War College, 2009), VII-13.

[7] U.S. Naval War College, *Joint Operation Planning Process (JOPP) Workbook* (Newport, RI: U.S. Naval War College, 2012), C-7–C-9.

[8] Ibid., C-7.

[9] Nine principles of war are recognized in joint doctrine: objective, offensive, mass, maneuver, economy of force, unity of command, security, surprise, and simplicity. See JP 3-0.

[10] JP 3-0, A-1–A-5.

[11] Vego, VII-14.

[12] Ibid.

[13] Ibid., VII-16.

[14] Ibid.

[15] Yves J. Bellanger, *U.S. Army Infantry Divisions 1943–45: Volume 1—Organization, Doctrine and Equipment* (Solihull, England: Helion and Company Limited, 2002), 53.

[16] David Kalat, *A Critical History and Filmography of Toho's Godzilla Series*, 2nd ed. (Jefferson, NC: McFarland Company, 2010), 2.

[17] Vego, VII-13.

[18] Commander in Chief, Pacific Ocean Areas, *Campaign Plan Granite* (College Park, MD: Department of the Navy, 1944), 1.

[19] Ibid.

[20] David C. Evans and Mark R. Peattie, *Kaigun: Strategy, Tactics, and Technology in the Imperial Japanese Navy 1887–1941* (Annapolis, MD: Naval Institute Press, 1997), 515.

U.S. Marines and Georgian soldiers exit USMC MV-22 Osprey tiltrotor aircraft during operation in Helmand Province (DOD/Ashley E. Santy)

Improving DOD Adaptability and Capability to Survive Black Swan Events

By William R. Burns and Drew Miller

Professor of risk engineering at New York Polytechnic University Nassim Taleb wrote persuasively about the need to prepare for catastrophes in his seminal work on risk management, *The Black Swan: The Impact of the Highly Improbable*.[1] A black swan event is an outlier, something outside the realm of regular expectations, where nothing in the past can convincingly point to the real possibility that it will occur or persuade us we need to prepare for its potentially dire consequences. But it is not an unpredictable event. Most major black swan events (the 9/11 attacks, for example) are foreseen and warned about, but the warnings tend to be ignored because of strong personal and organizational resistance to changing opinions and outlook. Many experts describe future threats such as bioengineered viral

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pandemics as "inevitable," yet they cannot predict their likelihood, and gaining attention (let alone mitigation) for these coming disasters is therefore extremely difficult.

The black swan provides insights into our tendency to avoid thinking about and preparing for rare but potentially catastrophic events. Taleb makes the case that we are physically and psychologically programmed to make common misjudgments. His key point is critical for the Department of Defense (DOD): Do not try to *predict* the likelihood of a disaster, but *prepare* for the impact. The most important thing DOD can do to prepare for inherent unknowns and new technologies capable of producing catastrophic effects is to enhance individual and organizational adaptability and procure more flexible, diverse weapons systems operated by more adaptable personnel.

Tasked by DOD to identify changes to training that would produce a military better prepared to respond to asymmetric threats, Institute for Defense Analyses (IDA) researchers postulated that given the uncertainty of future threats, the key skill or attribute that individuals, units, and teams of commanders and leaders need to improve on is adaptability.[2] IDA defines *adaptability* as the capacity to bring about an effective response to an altered situation, a metaskill that requires the integration of both cognitive and relational skills. To be adaptive, leaders at all levels, and particularly senior leaders, need to apply well-developed skills of critical and creative thinking, intuition (pattern recognition), self-awareness and self-regulation, and a variety of social skills in varying combinations and across a wide range of situations.[3]

This article offers eight recommendations on how to make DOD more adaptable and capable of deterring, countering, or recovering from black swan events.

Stop Using the Traditional Risk Matrix

The idea that we cannot predict when and where the military will have to respond has broad acceptance. A 2012 National Research Council report stated that "the U.S. is not very good at predicting threats of any kind."[4] Former Secretary of Defense Robert Gates noted, "Our record of predicting where we will use military force since Vietnam is perfect—we have never once gotten it right. . . . We need to have in mind the greatest possible flexibility and versatility for the broadest range of conflict."[5]

Since black swans are "unpredictable," Taleb states, "we need to adjust to their existence (rather than naively try to predict them)."[6] We should operate on the assumption that they will eventually occur and position ourselves to survive them. This view calls for rejecting the traditional two-axes risk matrix with consequence of event on one axis and probability of occurrence on the other. Defining *critical risks* the organization should deal with as those with high consequences and high likelihood of occurrence means ignoring black swans and remaining unprepared to survive the consequences when they occur.

Nick Bostrom, director of the Future of Humanity Institute at Oxford University, also argues against the common practice of assigning low probabilities to or ignoring unpredictable, has-never-happened-before threats:

Although more rigorous methods are to be preferred whenever they are available and applicable, it would be misplaced scientism to confine attention to those risks that are amenable to hard approaches. Such a strategy would lead to many risks being ignored, including many of the largest risks confronting humanity. It would also create a false dichotomy between two types of risks—the "scientific" ones and the "speculative" ones—where, in reality, there is a continuum of analytic tractability.[7]

Dr. Bostrom argues that when we consider the many potential sources of existential, black swan risks, there is substantial likelihood of some great disaster:

The balance of evidence is such that it would appear unreasonable not to assign a substantial probability to the hypothesis that an existential disaster will do us in. My subjective opinion is that setting this probability lower than 25% would be misguided, and the best estimate may be considerably higher. . . . The reactive approach—see what happens, limit damages, and learn from experience—is unworkable. Rather, we must take a proactive approach. This requires foresight to anticipate new types of threats and a willingness to take decisive preventive action and to bear the costs (moral and economic) of such actions.[8]

U.S. conventional force technological superiority almost demands that a determined opponent use an asymmetric attack such as weapons of mass destruction (WMD) or terrorism either to defeat our forces or to inflict losses that lead to loss of popular support for the campaign. Intelligent, determined adversaries will make their decision based on their calculation of costs and benefits influenced by our relative vulnerability.[9]

We maintain robust nuclear forces not because we estimate enemy use of nuclear weapons is likely, but because the consequences of not being well prepared could be disastrous. We cannot predict the likelihood of WMD attacks and should not try. It would be wiser to assume that an intelligent and determined adversary, aware of our vulnerabilities, would act to exploit them. We need the capability to deter, defeat, and recover from the worst threats.

Given unpredictable aspects of WMD and new technology risks, DOD would be better off focusing on consequences rather than deluding itself into thinking it could reasonably estimate likelihood of occurrence. If an organization refuses to abandon the standard risk matrix, then change the definition of critical risk so low-probability threats qualify as critical risk. Taleb points out that, "There are so many things we can do if we focus on anti-knowledge, or what we do not know."[10] While generally contrary to DOD culture of preventing attack, for many threats we need to prepare for disaster recovery: "It is much easier to deal with the Black Swan problem if we focus on robustness to errors rather than improving predictions."[11]

Encourage Critical Thinking

While IDA was tasked to develop an adaptability training strategy, its researchers found that adaptability was a function of not only training, but also education and experience. Education and training are part of a continuous process of learning, the robustness of which is dependent on real-world experience. In the classroom, regardless of the subject, the most important thing the student learns is to think critically—an essential skill for adaptive performance. Critical thinking takes hard work to develop and constant practice to maintain. Derek Bok, former president of Harvard University, observed, "Many [graduates] cannot reason clearly or perform competently in analyzing complex, non-technical problems, even though faculties rank critical thinking as the primary goal of an education."[12] Lieutenant General Sir John Kiszely, former director of the Defence Academy of the United Kingdom, recognizes the long-term value of education in developing adaptive leaders:

It is important to recognize the purpose of this education. Its purpose is not the purist one of the pursuit of knowledge for its own sake, but of developing capacity for good judgment. Such education, therefore, has a training dimension in that it is preparing practitioners to exercise good judgment in their profession, but not just in their next job or deployment, but over the duration of their career.[13]

A superficial understanding of the security environment and a simplistic view of history and culture are an invitation to bad judgments. The alternative is continuous learning, an ever-broadening perspective, and the practice of critical thinking, which allows students to question their own thinking and that of others.

DOD leadership should ensure that the development and practice of critical thinking is a priority of the military academies, the Naval Postgraduate School, command and staff schools, and war colleges. Books such as *Thinking in Time* that teach critical thinking and challenging assumptions and false analogies, brainstorming, and adaptive planning techniques should be a key part of officer education.[14] Nuclear strategist Victor Utgoff suggests that DOD should brainstorm black swan threats and then assign them as critical and creative thinking exercises to National Defense University classes, charging students and faculty to figure out how we could deal with them.[15]

Encourage and Promote Innovation and Adaptation

Probably the best adaptive capability we have in the U.S. military is the ability of Soldiers and young officers to adapt in battle. Special Forces on horseback in Afghanistan and Servicemembers in Iraq performing duties they had never been trained for—improvising to deal with bad situations—are case studies in bold, successful adaptation. As a particularly decisive example, when al Qaeda in Iraq took actions that led many Sunni insurgent allies to break with them, Army and Marine officers quickly adapted, moving to assist and work with insurgents they had just been fighting. Cooperatively, they promoted the Anbar Awakening and its expansion across Iraq. It is likely that future studies of the Iraq campaign will conclude that this movement was at least as important as the surge in U.S. forces.[16]

Many have suggested that adaptability in the lower ranks was not matched by similar adaptability in the strategic thinking and campaign planning of senior leaders.[17] The challenge, therefore, is to continue promoting adaptability on the battlefield while moving both the more adaptable individuals and the more adaptive thinking from the tactical level into the realm of operational and strategic planning, including efforts to deal with black swan events.

U.S. troops in the field are so good at adaptation because they are freed from many of the bureaucratic constraints that are constant in a headquarters. That bureaucracy is also what drives many bright young officers from the military. A 2011 Harvard study, which surveyed nearly 250 former junior officers who left the military between 2001 and 2010, revealed that the second most frequently reported reason was frustration with military bureaucracy.[18]

In 2004, Leonard Wong of the U.S. Army War College warned that the "Army must now acknowledge and encourage this newly developed adaptability in our junior officers or risk stifling the innovation critically needed in the Army's future leaders."[19] Six years later, William Deresiewicz, a Yale professor in a widely publicized lecture at West Point, urged cadets to fight bureaucratic conformity by thinking both critically and independently, challenging routines, and taking risks.[20] David Chu, former head of the top DOD personnel management office, suggested that talented and adaptive young officers could be retained and groomed for more senior leadership positions by not tying them to routine staff jobs that are a complete letdown from their combat tours. He pointed out that with the drawdown in Afghanistan, more officers would become available for nontraditional assignments that will allow them to advance their educations and expand their perspectives. He contends that those officers are much more apt to grow as leaders and be retained by the military if they are given the opportunity to influence their career paths and are not penalized for time away from traditional jobs.[21]

In 2007 the Army moved in a unique way to overcome its inability to promote talented but unconventional thinkers. Secretary Gates had directly challenged Army promotion practices when he called for "reexamining assignments and promotion policies that in many cases are unchanged since the Cold War."[22] Secretary of the Army Pete Geren called General David Petraeus, recognized as an unconventional thinker, "back from Iraq to Washington to lead a promotion board [fiscal year 2008 board] to pick the Army's new class of brigadier generals—an unprecedented assignment for a theater commander in the midst of a war."[23] Ultimately, the board selected several unconventional thinking colonels, officers who had previously been passed

USS *New Jersey* fires salvo from 16-inch guns during early 1984 deployment off coast of Lebanon (U.S. Navy/Ron Garrison)

over, for brigadier general. Many were watching for Colonel H.R. McMaster, USA, whose book *Dereliction of Duty* was an indictment of military leadership during the Vietnam War. McMaster was a brilliant officer who did not follow the "normal" career path to general, and he had been passed over before. McMaster was promoted and now serves as commanding general of the U.S. Army Maneuver Center of Excellence.

Civilian leaders need to ensure that those chosen to sit on selection boards and the precepts given to these boards contribute to promoting military leaders who are most capable of adapting to a rapidly changing environment and dealing with low probability but highly consequential events.

Continue to Improve Planning

General Dwight Eisenhower wrote, "Plans are worthless; planning is everything."[24] When black swan disasters hit, if we have anticipated them and conducted diverse "what if?" planning, we will be better prepared to act. DOD switched to adaptive planning in the 1990s. Paul Davis, an architect of those changes, judges that the shift has been largely successful.[25] By looking at a wide range of scenarios and a lot of "what if?" analyses of different enemy actions and capability options the United States could deploy, analysts, operators, and decisionmakers can devise a more flexible and capable force. Davis believes that most black swan events can be anticipated "but not which ones will actually occur."[26]

The Office of the Secretary of Defense (OSD) planning scenario process and shift to improving broad capabilities versus a force structure focused on one specific threat scenario (such as the Soviet invasion of Western Europe) has improved readiness to adapt. The Defense Department does consider some low probability events, but the scenario set should continue to broaden to include more black swan disasters such as electromagnetic pulse (EMP) attacks, bioengineered viral pandemics, and overwhelming homeland defense and recovery scenarios. OSD scenarios are limited by not only what is considered plausible, but also what can be funded. A larger and more challenging set of OSD scenarios is needed in a process that promotes adaptability despite budget constraints. IDA developed the Integrated Risk Assessment and Management Methodology to encourage evaluators to bring up all kinds of scenarios.[27] This structured approach to interviewing, discussing, and evaluating senior subject matter expert assessments permits the experts to assess risks as high as they want, unbounded by the

simple multiplication of probability and consequences.

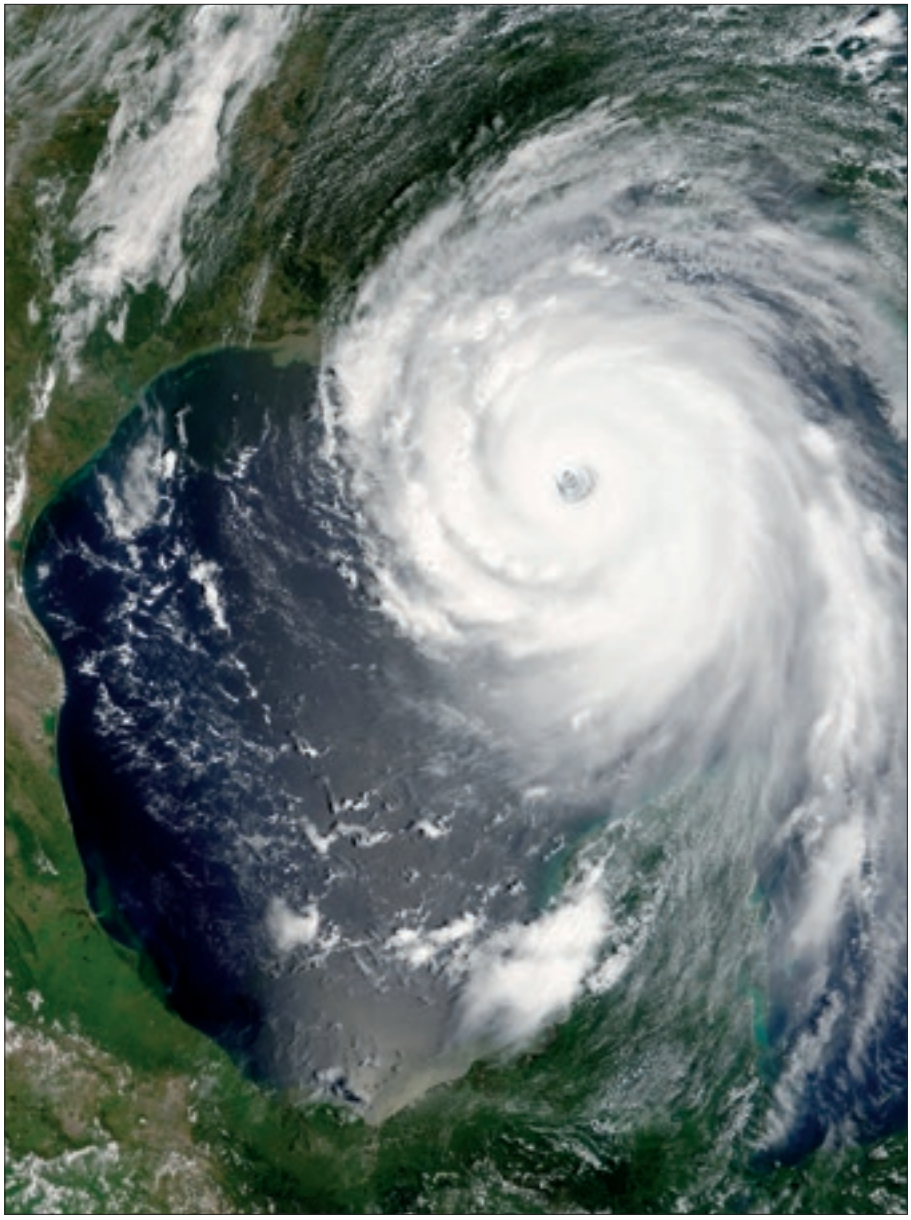
Army Colonels Kevin Benson and Steven Rotkoff call for more red teaming to improve planning: "the Red Team envisions the worst-case future. They describe the nightmare scenario in detail . . . then examine the plan to see how well it heads off the events that would lead to failure. Invariably, this leads the staff to see things it otherwise would not."[28]

Davis cautions that while the adaptive planning process has improved and young military officers are good at it, "they can get those traits beaten out of them by working in a bureaucratic headquarters."[29] This is another reason for the recommendation offered later to adapt DOD culture to promote questioning and challenging.

Promote "FARness"

Davis's key recommendation for improving DOD resource management is to emphasize "FARness"—that is, flexibility, adaptiveness, and robustness.[30] This is not the norm for acquisition programs. We have historically focused on specific threats or capability needs and chosen the single most capable (and usually most expensive) system to address the threat. Taleb's recommendations for improving adaptability and the capability to recover from black swan disasters are applicable: "Avoid optimization; learn to love redundancy. . . . Overspecialization also is not a great idea. . . . Above all, learn to avoid 'tunneling'—the last thing you need to do when you deal with uncertainty is to 'focus,' this focus makes you a sucker. . . . Compensate complexity with simplicity."[31]

Perhaps DOD should not pick the one item that appears the most capable but instead pick the top three or a combination with a broader range of capabilities, yielding a more flexible, robust force. A balanced, resilient force needs large numbers of simple, diverse systems to handle all contingencies. Low-cost systems procured in large numbers may not be optimal for meeting specific known requirements, but they may be lifesaving to preempt or recover from black swan disasters. Recall, too, that "known requirements" often assume the ability to predict the future accurately, a skill rarely demonstrated.



Hurricane Katrina at peak strength on August 28, 2005 (NASA/Jeff Schmaltz)

Many have warned that a high-altitude EMP attack could severely damage our high-tech conventional military capability. Cyber attacks, viral pandemics, and other disasters that shut down our just-in-time delivery-dependent economy might cause cascading effects that dwarf initial damage and casualties. Black swan risks and adaptability argue for having some basic systems in the inventory that would enable us to operate without the Internet, overnight deliveries, or staff who refuse to come to work to avoid a virus.

Demand Accountability

Adaptability requires responding to change, but in an effective manner. Leaders should be rewarded for adaptive performance and held accountable when they prove unable to adapt.[32] In *The Generals*, Thomas Ricks argued that "accountability is the engine that drives adaptability"[33] and took the Army to task for failing to hold its leaders accountable since World War II. He demonstrated how a system that

has not held leaders accountable has produced leaders who in many cases failed to adapt to the changing environment in which they operated, resulting in costly failures. Not holding leaders accountable has removed a major incentive for leaders to adapt. Promotions keep on coming even as a lack of understanding of the operational environment and adherence to outdated strategies lead to unnecessary expenditures and tragic loss of lives.

The military can improve its adaptive performance and better prepare for a black swan event if it takes the idea of accountability seriously. Senior leaders should be evaluated on their success or failure at meeting the goals and milestones they have established.[34] Their retention or relief should be dependent on hard-nosed evaluations. Holding senior leaders accountable in this manner would also influence talented younger officers to continue their service. Aggressive and forward-thinking young officers want to be part of an effective organization. The frustration of working under ineffective leaders who are unable to adapt was borne out in Paul Yingling's widely read article from 2007: "America's generals have failed to prepare our armed forces for war and advise civilian authorities on the application of force to achieve the aims of policy. . . . America's generals failed to adapt to the demands of counterinsurgency."[35] The symbiotic effect between seniors held accountable and imaginative junior leaders would, over time, produce a more adaptable military that is better prepared to deal with the constant challenge of a changing security environment and black swan threats.

Adopt a Policy of "Radical Openness"

Army colonels Benson and Rotkoff note that "Commanders require critical thinkers who can challenge assumptions and offer alternative perspectives,"[36] but if traditional reluctance to question commanders leads to self- or staff censorship, this vital critical thinking challenge and debate will not occur. Outworn ideas will persist. Nobel economist Kenneth Galbraith observed that, "faced with the choice between changing one's mind and proving that there is no need to do so, almost everyone gets busy on the proof." Chu reported that even when he asked people for their opinions, he often had to "pull" their thoughts out.[37] With the risks of disagreeing with bosses, few are likely to challenge them or to question accepted conventional wisdom. Yingling subsequently received a mediocre performance evaluation from his commanding general, who publically took exception to what the lieutenant colonel wrote.[38]

We examined how successful and adaptable businesses encourage people to speak out. Hedge funds stand out as businesses that must be especially adaptable to survive. Bridgewater is the largest and arguably most successful hedge fund. Founder and chief executive officer Ray Dalio has an aggressive culture he promotes called "radical openness," which basically means that one is not only allowed but also required to question anything and anyone, with total disregard to personal feelings or hierarchy, to probe for weaknesses and get at the truth. According to the Bridgewater Web site:

Above all else, we want to find out what is true and figure out how best to deal with it. We value independent thinking and innovation, recognizing that independent thinking generates disagreement and innovation requires making mistakes. To foster this thinking and innovation, we maintain an environment of radical openness, even though that honesty can be difficult and uncomfortable. . . . Everyone is encouraged to be both assertive and open-minded in order to build their understanding and discover their best path. The types of disagreements and mistakes that are typically discouraged elsewhere are expected at Bridgewater because they are the fuel for the learning that helps us maximize the utilization of our potential.[39]

This policy is aggressively implemented at Bridgewater.[40] There is no worse offense than failing to speak out or analyze. One must be "hyper realistic and hyper truthful" with cold, hard-hitting analysis. Would we not want this same commitment in the Intelligence Community and DOD?

The same ruthlessness at getting to the truth and "speaking truth to power" regardless of hurt feelings or positional authority was a feature of General Electric (GE) under Jack Welch. Of 30 companies originally in the Dow Jones industrial average, only GE has survived—a testimony to adaptability and evidence of the consequences of failing to adapt. An infamous management rule of Welch was to fire the lowest performing 10 percent of managers annually. He argued that firing the low performers was not only good for the company (and 90+ percent of the company personnel remaining) but also, in the long run, the individuals fired.[41] They were not in the right position and could move on to find a better fit. Bridgewater's Dalio makes the same argument: people often struggle with personal problems because they are not honest with themselves in focusing on harsh realities. Being told and having to accept that one really did make mistakes, or that one has poorly thought-through ideas or annoying personal habits that make them less effective, will never be enjoyable. But finding out about issues so one can change is better than remaining in ignorance.

DOD may not want to use the term "radical openness" and might prefer instead to call it "moral or intellectual courage," but it must seek a way to describe the duty to speak out strongly and honestly about improving everything from combat and major acquisition plans to office operations. Forcefully disagreeing does not require one to be rude or disrespectful. Honesty and moral courage should hardly be perceived as a threat to teamwork, camaraderie, or good order and discipline. Particularly for officers and personnel in decisionmaking positions, consistent with other principles of effective leadership, DOD should create a culture of radical openness that invites critical and creative thinking and demands speaking truth to power. Such openness would have particular relevance in thinking about potential black swan events where traditional standard operating procedures may be less likely to work and truly adaptive, perhaps radical, change may be needed.

USS *Cole* (DDG-67) conducts berth shift during port visit to Crete (U.S. Navy/Paul Farley)

Accept Disasters and Improve Capabilities

Taleb believes the effects of black swan events have been growing and accelerating as the world gets more complicated: "The future will be increasingly less predictable, while both human nature and social 'science' seem to conspire to hide the idea from us."[42] Many other policy analysts and business leaders have a similar view. The late Aaron Wildavsky, a president of the American Political Science Association and author of many books on public policy analysis, argued for adaptiveness and resilience over excessive regulations and restrictions on new technologies. He believed that enhancing the capacity to cope with and adapt to surprises rather than trying to prevent all catastrophes in advance was the best course of action.[43] Moreover, Warren Buffet insists that "the CEO should regard his position #1 as the Chief Risk Officer. Now you have a lot of other functions too, but you should wake up every morning and think about 'is this place built to take everything'?"[44]

Military culture understandably does not fit with the idea of admitting that we cannot know, cannot be prepared, and must accept a campaign phase of recovery from setbacks and defeats. Indeed, there is no such phase in formal DOD campaign planning. The military prides itself on being a "can do" organization where "failure is not an option." Yet even within the department, there are prophets accepting the inevitability of black swan events. In their 2012 strategic vision report, the Defense Threat Reduction Agency's Joint Science and Technology Office for Chemical and Biological Defense wrote, "Surprise from biological and chemical threats is inevitable."[45] As former Defense Secretary Donald Rumsfeld put it, "The only thing that should be surprising is that we continue to be surprised."[46] While we must do what we can to forestall or preempt an attack, we must also prepare to be surprised by ramping up both our ability to adapt

as the attack is happening and our capacity to recover from damage inflicted.

There are many low-cost preparations DOD could make to improve its ability to recover from a black swan disaster such as a viral pandemic. There are innovative and adaptive ways to cut costs if DOD becomes more adaptable and innovative.[47] (Many years ago, the Air Force Logistics Command developed a system to reward individuals for not fully spending their budgets, something considered impossible.[48]) With more innovative cost savings programs and more emphasis on simpler, flexible systems and adaptable people, DOD can improve its capability to deal with black swan risks.

Taleb warned that "the history of epidemics, narrowly studied, does not suggest the risks of the great plague to come that will dominate the planet."[49] We, and Taleb, would argue against "focus" on any specific threat, but we do urge the development of more adaptable leaders and more flexible capabilities to be prepared to respond to the broadest range of threats. While the Department of Defense is the most adaptive and innovative Federal agency in many ways, major improvements are still needed. **JFQ**

Notes

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[13] John Kiszely, *Post-Modern Challenges for Modern Warriors*, The Shrivenham Papers Number 5 (Shrivenham, Oxfordshire, UK: Defence Academy of the United Kingdom, December 2007), 15, available at <www.comw.org/rma/fulltext/0712kiszely.pdf>.

[14] Richard E. Neustadt and Ernest R. May, *Thinking in Time* (New York: The Free Press, 1986).

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[17] This point was dramatically made in a broadly publicized article by an Army officer in 2007. See Paul Yingling, "A Failure of Leadership," *Armed Forces Journal*, May 2007. A more recent example is Thomas E. Ricks, *The Generals: American Military Command from World War II to Today* (New York: Penguin, 2012). See chapters on Tommy Franks, Ricardo Sanchez, George Casey, and David Petraeus.

[18] Sayce Falk and Sasha Rogers, *Junior Military Officer Retention: Challenges and Opportunities* (Boston: John F. Kennedy School of Government, March 2011). In another survey of West Point graduates by Tim Kane, when asked why they left military service, 82 percent of the veterans responded "frustration with military bureaucracy." See Tim Kane, "Why Our Best Officers Are Leaving," *The Atlantic*, January/February 2011, 80–85, available at <www.theatlantic.com/magazine/archive/2011/01/why-our-best-officers-are-leaving/308346/>.

[19] Leonard Wong, *Developing Adaptive Leaders: The Crucible Experience of Operation in Iraqi Freedom* (Carlisle Barracks, PA: Strategic Studies Institute, July 2004), v, 20.

[20] William Deresiewicz; "Solitude and Leadership," *The American Scholar*, Spring 2010.

[21] David Chu, interview by authors, March 26, 2013.

[22] Ann Scott Tyson, "Petraeus Helping Pick New Generals," *The Washington Post*, November 17, 2007.

[23] Ricks, 438.

[24] President Dwight Eisenhower, Remarks at the National Defense Executive Reserve Conference, November 14, 1957.

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[26] Ibid.

[27] James S. Thomason, *IDA's Integrated Risk Assessment and Management Model*, IDA P-4470 (Alexandria, VA: IDA, 2009).

[28] Kevin Benson and Steven Rotkoff, "Goodbye OODA Loop: A Complex World Demands a Different Kind of Decision-Making," *Armed Forces Journal*, October 2011, 28.

[29] Davis, interview.

[30] Paul K. Davis, "Methods and Tools for Portfolio Analysis," Military Operations Research Society Quadrennial Defense Review Conference, January 13, 2009.

[31] Taleb, 133, 371, 375.

[32] As an example of great critical thinking and adaptability, consider the World War II decision to "island hop" in defeating Japan. The idea was to leave Japanese-held islands isolated rather than take each one in succession: "The Central Pacific drive was unique in the history of warfare. Nothing in the past gave any sure clue as to how armed forces could advance in great leaps across an ocean studded with hostile island bases." See E.B. Potter and Chester W. Nimitz, eds., *Sea Power—A Naval History* (New York: Prentice Hall, 1960), 737.

[33] Ricks, 451.

[34] See David Barno et. al., *Building Better Generals* (Washington, DC: Center for a New American Security, October 2013), 27–29.

[35] Yingling.

[36] Benson and Rotkoff, 41.

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[43] Aaron Wildavsky, *Searching for Safety* (New Brunswick, NJ: Transaction Books, 1988).

[44] Warren Buffett, interview by *FoxBusiness.com*, January 2010.

[45] Defense Threat Reduction Agency (DTRA), *2012 DTRA RD Enterprise CB Directorate Strategic Vision*, 16, available at <www.dtra.mil/docs/system-documents/2012_StrategicVision-Web2.pdf?sfvrsn=0>.

[46] Donald Rumsfeld, *Rumsfeld's Rules: Leadership Lessons in Business, Politics, War, and Life* (New York: Broadside Books, 2013).

[47] The Air Force tanker lease debacle will come to mind for some, but there are ways to leverage civil air patrols and official state militias, to use Reserve and retired personnel more effectively, and to ready large, simple forces with little strain on the DOD budget.

[48] Michael Barzelay and Fred Thompson, *Efficiency Counts: Developing the Capacity to Manage Costs at Air Force Materiel Command* (Washington, DC: IBM Center for the Business of Government, 2003).

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U-2 Dragon Lady taxis for takeoff in Southwest Asia
(U.S. Air Force/Eric Harris)

Strategy for Intelligence, Surveillance, and Reconnaissance

By Jason M. Brown

In the last 10 years, numerous reports have highlighted obstacles to the integration of intelligence, surveillance, and reconnaissance (ISR) into military campaigns and major operations.[1] The root cause of many of these difficulties is adherence to a centralized Cold War collection management doctrine focused on production rather than goals and objectives.[2] This Industrial Age concept is not agile enough to meet the challenges of military operations in the information age, which include compressed decision cycles and demands for operational precision. A strategy-oriented approach that balances ISR ends, ways, and means will more effectively meet commanders' needs and expectations in today's increasingly complex operating environments.

The Problem

The history of the U-2 aircraft in Operation *Iraqi Freedom* illustrates the challenges related to ISR integration. Shortly after the start of the Iraq War, insurgent use of improvised explosive devices (IEDs) caused the United States to spend billions of dollars and dedicate substantial resources toward defeating these threats. This included tasking reconnaissance aircraft to find IEDs prior to detonation.[3]

Intelligence collection managers at the Multi-National Corps–Iraq (MNC-I) headquarters routinely tasked the U-2 to conduct change detection, a technique of using two images taken at different times to determine changes on the ground. In theory, if an insurgent planted an IED in the time between the two images, an analyst could detect a change on the second image and report the possibility of an IED.[4] Because the collection managers treated all counter-IED requirements equally, MNC-I "peanut-butter spread" U-2 coverage throughout Iraq.[5] As a result, the U-2 could not capture the second image required for change detection until 4 to 5 days after the first, while insurgents often detonated IEDs within hours of planting them. Moreover, analysts within tactical units had to submit most collection requests no later than 72 hours in advance of a U-2 mission, long before units planned and executed missions

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involving ground movement. Finally, collection managers at MNC-I discouraged U-2 operators and analysts from interacting directly with ground units for fear the units would circumvent their rigid collection request process. Consequently, U-2 operations did not integrate with the tactical operations they were meant to support.[6] The result was little to no evidence that change detection found any IEDs. Despite this lack of evidence, collection managers, concerned more about the percentage of satisfied requirements than flaws in ISR strategy, continued to task the U-2 to hunt for IEDs via change detection for nearly 5 years.[7]

This U-2 example illustrates a decades-old systemic problem with ISR. During the Cold War, limited availability of collection assets and an Industrial Age approach to intelligence production favored long-term indications and warning problems focused on large-signature collection targets such as Soviet tank divisions. As a result, a system of managing competing requirements emerged that worked well for static environments but failed to adequately integrate ISR operations into dynamic military operations.

While a lack of analytic and collection resources contributed to ISR problems, it did not explain why the same issues persisted despite a massive infusion of ISR resources into Iraq and Afghanistan.[8] In 2010 the Department of Defense (DOD) ISR Task Force (ISR TF) conducted a study on the utility of ground moving target indicator (GMTI) platforms, such as the E-8C Joint STARS, in Afghanistan. The study found the utility was "moderate to low" not because GMTI was inappropriate for the operating environment, but because there was not an effective organizational framework to integrate ISR operations to optimize intelligence and tactical effects.[9]

The following describes how the doctrinal collection management process essentially works. An analyst believes that a specific intelligence discipline, such as GMTI, can identify a signature related to a collection target, which is validated, deconflicted, and prioritized by collection managers. A collection manager then tasks an asset to collect the requirement based on the priority ranking and the frequency with which analysts need information about the collection target.

The ISR TF discovered many drawbacks to this process. First, analysts and collection managers rarely had the appropriate understanding of ISR capabilities to determine the feasibility of requirements. Analysts submitted requirements based on limited ISR training prior to deploying, and collection managers throughout the validation process often rubber-stamped requirements. For example, analysts would submit GMTI requirements over cities failing to recognize GMTI platforms' inability to distinguish moving targets in the clutter of an urban environment. Second, there was little incentive for time-constrained analysts to remove older requirements from the collection management system. Collection managers provided little oversight on purging the system of stale requirements, yet they would grow frustrated, for example, if their change detection requirements had a 35 percent satisfaction rate.[10] The third problem was that requirements were rarely prioritized to focus ISR on the most important task at any given time. For example, if five different units had counter-IED requirements in the system, each likely had the same priority, even though four out of five may not have planned any ground movement during the collection cycle. Lastly, there was little to no feedback to determine if intelligence collection was meeting commanders' expectations. The system focused on whether ISR resources "satisfied" the requirement, which meant collection occurred, not that collection actually met commander's intent. In short, analysts, collectors, and consumers rarely interacted directly, and ISR planners expended more energy on administering requirements than planning to meet commanders' objectives.[11]

Many leaders and analysts eventually realized that it was not viable to submit formal intelligence requirements and then hope all the pieces would arrive at the right time.[12] Military units achieved ISR success by focusing less on managing requirements and more on ends, ways, and means. In other words, they succeeded when they thought through objectives and concepts to allow commanders to arrange ISR resources in time, space, and purpose.

Units found some success in countering IEDs, for example, by refocusing ISR from locating the devices to understanding the insurgent network behind them. To meet the *ends* of protecting troops from IED attack, ISR planners adjusted the *ways* from threat warning to targeting, and the *means* from route scans to manhunting. This new approach required phasing and layering ISR resources against the right targets at the right time. One Marine unit in early 2012, for instance, dedicated 80 percent of its ISR resources to studying insurgent network patterns and linkages. This shift against routine procedures of route scans and patrol overwatch required a great deal of restraint by the unit commander to allow time for ISR efforts to generate targeting intelligence. In this case the Marine unit learned the path to force protection was indirect and was only obtainable by carefully thinking through the ISR strategy that would achieve the commander's goals.[13]

The Marines' success juxtaposed with the ineffective Industrial Age requirements-based processes illustrates the need for new thinking about ISR strategy. The Marines succeeded because they adjusted ISR ends, ways, and means to achieve their commander's intent. Rather than impose an ISR construct meant for static warning scenarios, commanders must emulate the Marine example and create processes that generate similar effects throughout a joint force engaged in a campaign. Other warfighting functions such as joint fire support have a solid foundation and track record for achieving that purpose—that is, integrating the ends, ways, and means related to that function with the overall campaign strategy.[14] Joint forces can achieve the same result by developing a process to develop and articulate a commander's intent for ISR.

Developing the Commander's Intent

The goal of an ISR strategy should be to create a problem-centric and not a requirements-centric approach to opera-

AH-64 Apache attack helicopter at Bagram Airfield after conducting armed reconnaissance operations and precision air strikes (U.S. Air Force/Matt Hecht)

tions. In other words, analysts, platform operators, and consumers should state the problems they must solve, not simply what requirements they must satisfy. Success in military operations increasingly depends on a commander's ability to unify the ISR enterprise in support of campaign goals. Articulating intent—the traditional method that commanders use to establish unity of effort for organizationally complex operations—is the necessary but often overlooked step to focus ISR strategy.

According to the Chairman of the Joint Chiefs of Staff (CJCS), *intent* is one of the basic principles of mission command, which is the operating construct "critical to our future success in defending the nation in an increasingly complex and uncertain operation environment."[15] He continues, "Shared context is a critical enabler of . . . intent. In mission command, intent fuses understanding, assigned mission, and direction to subordinates. Commanders will be required to clearly translate their intent (and that of higher commanders) to their subordinates and trust them to perform with responsible initiative in complex, fast-changing, chaotic circumstances."[16] The key to intent, therefore, is to establish shared context. Lawrence Shattuck states, "It is not enough to tell subordinates what to do and why. When situations permit, commanders should explain how they arrived at the decision. Explaining the rationale helps subordinates understand and develop similar patterns of thought."[17]

ISR operations over the last decade have demonstrated the importance of explaining intent to higher headquarters and outside organizations as well. Major John Ives, the J2 for Combined Joint Special Operations Task Force–Afghanistan (CJSOTF-A), explained how his team sold the ISR strategy for Village Stability Operations (VSO) to establish shared context among higher headquarters collection managers and supporting ISR organizations:

Fearing our phased non-kinetic collection requirements, taken individually, would go uncollected, the J2 ISR team briefed the plan in its entirety to the [higher headquarters] *collection managers (CM). The briefing flowed from the operational macro view of CJSOTF-A's mission to the tactical micro view of a village stability platform, followed by the comprehensive collection plan as it related to the phases of VSO expansion. . . . Linking the purpose of the collection plan to the individual requirements proved highly productive and informative. The CMs recognized the overall long term phased collection plan as both sustainable and feasible.*[18]

All of this suggests that ISR strategy must start by framing the problem, setting mission expectations, and

Marines load RQ-7B Shadow UAV onto launching ramp, Camp Leatherneck, Helmand Province (U.S. Marine Corps/Robert R. Carrasco)

outlining objectives in a way that will guide the activities of disparate groups and organizations at all levels toward a common purpose.

Framing Intelligence Problems

Commanders and their ISR staffs must understand *what* they are trying to accomplish before they determine *how* to accomplish it. This starts by examining the campaign goals in order to determine the problems ISR operations must solve. The challenge for ISR in recent campaigns is the lack of a common framework for approaching problems to consistently drive collection and analysis. From the 1970s through the 1990s, the DOD Intelligence Community had a clear system for profiling potential adversaries in the form of orders of battle overlaid with capability assessments. While this machine was adequate for conventional scenarios, it was virtually meaningless to the operations over the past decade, and no framework has clearly arisen to replace it.[19] Intelligence problems have become campaign specific; therefore, planners must make the effort to frame unique problems and not rely on peacetime organizational inertia to define the categories for analysis and collection.

Framing those problems begins with exploring the ends, ways, and means of the various players who influence the operating environment. That effort can provide planners manageable categories of intelligence problem sets (IPS) to focus ISR planning.[20] Planners must avoid making IPS an order of battle by another name. Categorizing with proper nouns (people, places, and things) can result in analytic gaps; therefore, analysts and planners should focus on behavior and intent as the criteria to define IPS. For example, in assessing threats to air operations, an intelligence organization may spend a great deal of time studying an integrated air defense system (IADS). What an organization may overlook is that the adversary's primary objective, or end, is *not* to shoot down aircraft; it is to *prevent* getting bombed. While the organization may pursue this goal by using its IADS, it will likely use other ways and means to achieve the goal—cyber attack or poisoning the airbase water supply, for example. The most appropriate IPS in this scenario would be *adversary attack of our airpower*. This ends-ways-means problem framing drill can provide the analytic framework for a campaign and the starting point for focusing ISR.

Once planners identify IPS, they can then determine where and how to leverage the ISR enterprise by asking a series of questions. What are the capabilities and limitations for ISR against each IPS? What IPS are most relevant in the pursuit of campaign goals? How thin can planners spread resources among IPS while still effectively supporting the campaign? In answering these questions, planners should consider five roles and missions for ISR that emerged in the last decade: understanding the environment, targeting, operational assessment, threat warning, and operations overwatch.[21] The commander must effectively balance these roles and missions by identifying priority, weight of effort, and phasing within the campaign.

Ranking Roles and Missions

Historically, ISR has been decisive when focused on the right roles and missions at the right time. The U.S. Navy was victorious during the Battle of Midway primarily because signals intelligence and aerial reconnaissance provided awareness of Japanese operations (threat warning) and reaction to Navy deception efforts (operational assessment). During the Korean War, the effort of U.S. intelligence to analyze the site of the Inchon Landing (understand the environment) enabled the strategic surprise of the amphibious operation. Efforts to understand and destroy key components of air and air defense capabilities were the decisive factors in both the Six Days' War and Operation *Desert Storm* (targeting).[22]

Inherent tension between ISR roles and missions, particularly those that require operational and tactical patience (understanding the environment, operational assessment, and targeting networks) and those requiring short-term support (threat warning, operations overwatch, and targeting specific threats) can result in an ineffective application of resources. The counter-IED examples show how competition for assets between roles and missions requires commanders to make clear choices. If commanders do not articulate priorities between roles and missions, planners inevitably revert to spreading resources thinly, primarily to support short-term operational needs, while potentially making ISR ineffective for all missions. As Devaunt LeClaire states, "Using an ISR asset exclusively

to support operations is 'robbing Peter to pay Paul' in that planning based on sound information and intelligence is not possible without robust collections."[23] Choosing to focus ISR on a single problem set does not guarantee success, however. When commanders focus on roles and missions where ISR is ineffective (threat warning for IEDs), they siphon resources away from roles and missions where ISR succeeds (targeting the network).

Another dilemma commanders face when developing an ISR strategy is whether to strengthen ineffective ISR roles and missions. While attempts to strengthen ISR capabilities for threat warning against IEDs were mostly ineffective, efforts to reorient ISR toward understanding the environment and population in Iraq and Afghanistan were vital in pursuit of counterinsurgency objectives. Adding additional remotely piloted aircraft to the Libya operation improved North Atlantic Treaty Organization targeting capabilities, helping lead to Muammar Qadhafi's demise.[24]

Determining which roles and missions to emphasize or strengthen requires a constant evaluation of the enterprise's capabilities, coverage, capacity, and constraints. ISR planners can use these "4Cs" throughout the development of ISR strategy by asking the following questions about specific resources and the enterprise as a whole:

- Are the available resources capable in dealing with the problem sets?
- Is the capacity sufficient to cover the timelines related to the IPS operating scheme?
- Does the enterprise have adequate coverage both geographically and within the networks analysts are trying to understand?
- What constraints prevent the ideal employment of resources?

The answers to these questions can help commanders develop obtainable and relevant objectives for ISR.

Stating Objectives

Joint doctrine defines an *objective* as "a clearly defined, decisive, and attainable goal toward which every operation is directed."[25] Using campaign goals, IPS, roles and missions, and the 4Cs as a foundation, commanders can develop ISR objectives that provide focus and direction to operational and intelligence efforts. ISR objectives can also provide a basis for resource development, deployment, apportionment, and allocation. Staffs struggle with these activities because collection requirements provide the foundation for ISR resourcing decisions. Requirements are difficult to regulate, which inevitably leads to an ever-increasing demand for resources and a misrepresentation of needs and risk. The U-2 was continually tasked to conduct change detection, for example, because the requirement satisfaction rate was always low and collection managers believed they needed to fix that shortfall. If, instead, the ISR staff used an objective such as "Provide threat warning for convoys by delivering intelligence to ground units of probable IED locations," U-2 change detection missions would have received appropriate scrutiny when they did not produce results or, put another way, when the ways and means did not achieve the ends. ISR objectives that flow from commander's intent and appropriately defined IPS provide a better foundation for ISR assessment.

Objectives provide a common terminology to prioritize the things a commander must *know* alongside what he must *do*. This is important for working through the competition between roles and missions (that is, should planners pull resources off targeting missions to conduct operations overwatch?). As the roles for all types of resources continue to blur—traditional fire and maneuver assets gathering intelligence, for instance—objectives offer a clear process to prioritize both operational actions and intelligence collection for infantry squads, fighter pilots, remotely piloted aircraft crews, and cyber operators alike. Finally, objectives provide a foundation for implementing mission command through mission type orders (MTOs) within an ISR enterprise.[26] MTOs convey purpose and intent and facilitate the interaction among ISR consumers, platform operators, and analysts.[27] This is the surest way to establish shared context within the organizationally complex ISR enterprise.

The four components of a commander's intent for ISR—campaign and operational goals, intelligence problem sets, roles and missions, and objectives—are the foundation of a strategy. Intent is more than a way to establish shared context and unity of effort; it is an investment in ISR strategy that eventually pays substantial dividends.[28] The largest dividend of intent is the foundation it establishes for leading the ISR enterprise. As organizations become more connected and operations become more complex, leadership in implementing intent matters infinitely more than management.

Implementing the Strategy

In addition to a conceptual framework, commanders and their staffs require a practical method to develop and carry out ISR strategy given information age capabilities and challenges. Iraq provided an example of a higher staff exercising tighter controls to regulate and synchronize ISR in an attempt to deal with emerging organizational and operational complexities.[29] Centralized ISR planning as part of a joint operational planning process may work well in the early phases of a campaign and in high-risk scenarios; however, as operations progress, headquarters attempting to control diversified and distributed processes and organizations can stifle the ISR enterprise's ability to adapt to changing conditions in a campaign. Despite lessons from Iraq and Afghanistan, joint doctrine still emphasizes a centralized method for developing ISR strategy, failing to account for the complex command relationships or the increasingly collaborative nature of ISR planning that affects the full spectrum of operations.[30] Rather than focus on centralized planning, commanders should concentrate on synchronizing ISR strategy teams at multiple echelons and components through appropriate resourcing, relationships, and processes.

While not using the term *ISR strategy teams*, in recent campaigns formal or

working groups emerged within organizations to flatten hierarchical structures and integrate expertise to improve ISR operations. Commanders and their staffs can discern practical methods to integrate these teams by specifically examining strategy improvements between the height of operations in Iraq (2006–2008) and Afghanistan (2010–2012). There were significant differences between the campaigns that partially account for these improvements including wider dispersal of units, a greater coalition presence, and a much larger armada of ISR assets in Afghanistan. However, the most important lessons on ISR strategy from Afghanistan are not related to ostensible situational advantages, but rather come from structural and procedural improvements that reduced friction, promoted planning integration, and encouraged operational creativity.

Identifying the Lessons

At the height of operations in Afghanistan, commanders made two key structural improvements to ISR strategy as compared to Iraq. First, the United States dedicated more manpower to ISR planning at multiple echelons. This included deploying Air Force ISR liaison officers (ISRLOs) to brigade- and battalion-level units. Embedding ISRLOs created de facto ISR strategy teams that effectively worked through the 4Cs of ISR strategy and flattened hierarchal planning processes. Second, the International Security Assistance Force Joint Command (IJC) offered greater incentives for planners to think through ends, ways, and means rather than flooding the system with requirements. While headquarters in both Iraq and Afghanistan conducted Joint Collection Management Boards to allocate resources, the former focused on the number of operations and requirements as a means to justify allocation, while the latter encouraged analytic rigor in its allocation process. Subordinate units in Afghanistan more often had to explain not simply *what* they needed but *how* they would employ ISR resources. The introduction of the ISR MTO concept, which provided tactical units greater flexibility in executing operations and an organizational construct to share operational context, offered another incentive to integrate strategies. IJC required detailed coordination and planning before approving ISR MTOs. In short, higher headquarters in Afghanistan focused more on prioritization, and units were more likely to receive resources and/or more flexibility when they invested intellectual capital in ISR strategy instead of simply submitting requirements. This second structural improvement—designing a system that encouraged better planning—could not have happened without the first improvement—resourcing units with the right people to carry out that planning.[31]

Building the Team

Given those lessons, how should ISR strategy teams organize and operate? Describing how special operations forces designed their ISR teams in Iraq and Afghanistan, Lieutenant General Michael Flynn, USA, wrote in 2008, the "organizational imperative was simple: get the best people and bring them together face to face in a single location collaborating on a target set while orchestrating reachback support to their national offices."[32] But what if face-to-face interaction is not feasible? Organizational and logistical constraints may lead to a distributed ISR strategy team connected by modern technology. While not always ideal, there were numerous examples in Afghanistan where a distributed construct worked when members were focused on launching planning efforts, building relationships, and remaining relevant. Whether formal, ad hoc, face to face, or distributed, ISR strategy teams succeeded with the right mix of analysts, capability experts, and consumers with the right planning, critical thinking, and leadership abilities.[33]

Effective teams must include active leadership and expertise to break through the inherent imperfection of processes, technology, and organizational structures. Simply relying on formal, impersonal processes will not sufficiently focus the enterprise to solve a unit's intelligence problems. ISR strategy teams must address challenges through leadership, tradecraft, policy, and technology, in that order. Too often, commanders and staffs approach problems in the reverse. As Timothy Oliver, who served five tours in Iraq and as an intelligence battalion commander in Afghanistan, asserts, "Any success or failure of intelligence stems from the same source as other types of military failures, from the leadership. Intelligence must be an 'all hands' effort, and commanders, consumers, and producers all must drive this process and insist on its success."[34]

Fostering Relationships

ISR strategy consistently succeeds when team leaders overcome the challenges of multiorganizational complexity and lack of unity of command by building solid personal relationships. Alternatively, poor relationships often directly contribute to ineffective ISR strategy. Because every commander's level of confidence and perception of risk are linked to ISR, competition for resources between organizations can quickly become personal. Trust can easily break down when teams begin to stereotype along organizational lines and argue over command relationships. Trust depends on selecting knowledgeable team members who can break down cultural and organizational barriers in pursuit of mission accomplishment and installing the right leaders to direct their efforts.

Leaders overcome barriers and create trust by demonstrating transparency, empathy, and competence. Major Ives provides an example: "Our ISR team's proficient grasp of collection management created a mutual trust with the IJC ISR planners. Over the next few days, our two teams worked hand-in-hand towards a theater-wide effort supporting the original purpose of the focus area collection without disrupting the IJC priority collection plan for ongoing named operations."[35] Ives illustrates the success that well-resourced teams had when operating within a system that incentivized both competence and interaction. Valuing

competence and creating trust resulted in a virtuous circle that reinforced itself over time, leading to a willingness to accept greater risk to obtain greater payoff in future ISR operations.

Testing the Process

Trust alone, however, will not deliver success. ISR strategy teams must also build an effective structure and process to meet mission requirements. Other than identifying the need to integrate effectively within operational planning processes, any other prescriptive guidance on developing ISR strategy would not likely apply across a broad spectrum. Leaders must avoid making the campaign fit a doctrinal process, and must instead design a process to fit the campaign. That said, planners should apply several tests to any ISR strategy development process.

First, does the process minimize and scrutinize assumptions? Unlike fire and maneuver capabilities, ISR does not have an adequate test and evaluation process. As a result, ISR planners often rely on assumptions about capabilities versus collection targets, and consequently they should conduct thorough operational assessments to continuously evaluate those assumptions. Planners may assume a sensor is adequate for finding IEDs but must develop a feedback loop that focuses on the interplay of enemy and friendly activities to determine the assumption's validity.

Second, does the process minimize gaps and seams in a way that creates a problem-centric ISR enterprise? ISR teams must work through organizational complexity by refining the process to make the enterprise act as a whole. Organizing constructs including ISR objectives, MTOs, or a find-fix-finish-exploit-analyze targeting model can provide the synchronization needed for a problem-centric approach.[36]

Third, does the process allow for resources to quickly mass and disperse with minimal friction? Losing ISR resources to another unit or mission often creates a significant emotional event for commanders and staffs. This can cause staffs at multiple levels to expend energy on organizational knife fights instead of future planning. Organizations can overcome this friction when commander's intent is adequately developed, updated, and communicated in a way that subordinate commanders perceive that the allocation decisions are consistent and in line with campaign goals. IJC's prioritization and weighting scheme enabled massing and dispersal while limiting friction because ISR stakeholders at all levels understood that IJC made its allocation decisions in line with the commander's priorities.

When designing processes to develop ISR strategy, commanders and staffs should consider important lessons from Iraq and Afghanistan that demonstrate the need for dedicated teams at multiple levels to continually refine ISR strategy. Investment in leadership, manpower, relationships, and balanced processes are critical to making these teams effective. This focus provides the best method to ensure shared context and expertise throughout the enterprise. It also overcomes the disaggregation inherent in the requirements-based collection management process. As Lieutenant General Flynn concludes:

If we do more synchronized planning with greater rigor right from the start, using our operations planning process, we can provide our subordinate units greater flexibility and less uncertainty. At the end of the day, we achieve success in combat when subordinate units collectively understand the mission and higher commands have properly resourced them for success. Then and only then can they accomplish a well-synchronized campaign plan.[37]

Conclusion

ISR strategy should provide focused direction and create a shared context that orients the ISR enterprise toward problem-solving over production. Articulating intent, as the CJCS asserts, is the best method to achieve these aims. The commander's intent for ISR should define intelligence problems and identify the critical ISR roles and missions to address those problems based on the capabilities, coverage, capacity, and constraints of available resources. Intent must guide the enterprise and joint force toward achieving specific ISR objectives that support campaign goals. In short, intent balances the ends, ways, and means of ISR operations and facilitates leader efforts to integrate intelligence and operations in ways modern military campaigning demands.

The key to developing and implementing ISR strategy is finding ways to move organizations, relationships, and processes toward collaboration, trust, and incentives. During recent operations, leaders created ISR strategy successes when they overcame organizational inertia and doctrinal restrictions that impeded integration. This happened when leaders focused teams of experts at multiple echelons on ISR strategy. These teams balanced the needs of lower level commanders with campaign goals and reduced friction between organizations that inevitably occurs in operations involving life and death.

The role of ISR in building confidence and reducing risk naturally leads to competition over resources. Less successful attempts to reduce pressure and friction in recent campaigns included throwing resources at problems or spreading them evenly among organizations without adequately balancing ISR ends, ways, and means. The struggle to counter IEDs offers an example of how organizations can obsess over numbers while losing sight of operational realities. The last decade drove significant learning on ways to make ISR relevant in high-tempo operations. The joint force must codify the hard lessons learned on evolving ISR processes that reduce friction and increase timeliness while retaining a focus on priorities and effectiveness. Failure to do so will mean future commanders and staffs will once again spend energy and resources chasing white whales instead of developing winning ISR strategies.

When faced with information age challenges and their impact on ISR operations, many still insist better adherence to collection management doctrine is the answer. Departure from proven doctrine has certainly led to disaster for military

forces in the past. However, joint ISR doctrine has yet to prove itself in major operations without significant modification. If there is one fundamental flaw in current joint doctrine, it is that ISR is *managed*, while other forms of operation are *led*—and doctrine that relies on management over leadership will fail time and again in the heat of battle. JFQ

Notes

[1] Patrick W. Lueb, Department of Defense (DOD) Intelligence, Surveillance, and Reconnaissance (ISR) Task Force (TF), interview by author, October 15, 2012. Mr. Lueb is the lead action officer for the ISR TF Mission Management project. The project began in 2010 after an ISR TF study on the effectiveness of ground moving target indicator (GMTI) in Afghanistan. Based on the results of the study, General James Cartwright, then Vice Chairman of the Joint Chiefs of Staff, directed the ISR TF to lead a doctrine, organization, training, materiel, leadership and education, personnel and facilities change recommendation to improve ISR mission management. The author was the lead project officer for the doctrine and organization working group for this effort. The ISR TF found several documents, including reports from the General Accounting Office (GAO-12-396C, GAO-11-224C) and 2010 Joint Forces Command ISR Summit, which highlighted similar integration challenges identified during the GMTI study.

[2] David A. Deptula and R. Greg Brown, "A House Divided: The Indivisibility of Intelligence, Surveillance, and Reconnaissance," *Air & Space Power Journal* 22, no. 2 (Summer 2008), available at <www.airpower.au.af.mil/airchronicles/apj/apj08/sum08/deptula.html>.

[3] For a discussion of airborne reconnaissance change detection techniques for the counter-IED mission, see Joint Airpower Competence Centre, *NATO Air and Space Power in Counter-IED Operations*, July 2011, available at <www.japcc.de/fileadmin/user_upload/Reports/CIED_2/NATO_Air_and_Space_Power_in_Counter-IED_Operations._A_Primer-Second_Edition.pdf>.

[4] Rick Atkinson, "There was a Two-Year Learning Curve . . . and a Lot of People Died in those Two Years," *The Washington Post*, October 1, 2007, available at <www.washingtonpost.com/wp-dyn/content/article/2007/09/30/AR2007093001675.html>.

[5] Stephen C. Price, Jr., "Close ISR Support: Re-organizing the Combined Forces Air Component Commander's Intelligence, Surveillance and Reconnaissance Processes and Agencies" (Thesis, Naval Postgraduate School, December 2009), 156, available at <http://edocs.nps.edu/npspubs/scholarly/theses /2009/Dec/09Dec_Price.pdf>.

[6] Michael L. Downs, "Rethinking the Combined Force Air Component Commander's Intelligence, Surveillance, and Reconnaissance Approach to Counterinsurgency," *Air & Space Power Journal* 22, no. 3 (Fall 2008), available at <www.airpower.maxwell.af.mil/airchronicles/apj/apj08/fal08/downs.html>.

[7] Atkinson and author's direct experience.

[8] Between 2008 and 2012, the ISR TF directed the increase of ISR resources in Iraq and Afghanistan totaling over $11 billion.

[9] Lueb, interview.

[10] This is a synopsis of a discussion the author had with Multi-National Corps–Iraq collection managers in August 2008 regarding the ineffectiveness of change detection.

[11] Lueb, interview.

[12] Colonel Rachel A. McCaffrey, chief, ISR division at the Poggio Renatico Combined Air Operations Center 5 for Operation *Unified Protector*, email to author, January 20, 2013.

[13] Lueb, interview.

[14] Joint Publication (JP) 3-09, *Joint Fire Support* (Washington, DC: The Joint Staff, June 30, 2010), chapter 2; and U.S. Joint Forces Command, *Joint Fires and Targeting Handbook*, October 19, 2007, chapter 2.

[15] General Martin E. Dempsey, "Mission Command White Paper," April 3, 2012, 3, available at <www.jcs.mil/content/files/2012-04/042312114128_CJCS_Mission_Command_White_Paper_2012_a.pdf>.

[16] Ibid., 5.

[17] Lawrence G. Shattuck, "Communicating Intent and Imparting Presence," *Military Review*, March–April 2000, 71.

[18] John M. Ives, "Back to Basics: Reenergizing Intelligence Operations," *Small Wars Journal*, January 16, 2013, available at <http://smallwarsjournal.com/jrnl/art/back-to-basics-reenergizing-intelligence-operations>.

[19] Chris Whitlock, former president of National Interest Security Company and Edge Consulting, email to author, November 2, 2012.

[20] *Theater ISR CONOPS* (Washington, DC: Headquarters Department of the Air Force, January 4, 2008), 6.

[21] This list of roles and missions is not outlined in doctrine but is derived from the author's own experience and suggestions from colleagues.

[22] Gregory Elder, "Intelligence in War: It Can Be Decisive," *Studies in Intelligence* 50, no. 2 (April 2007), available at <www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/csi-studies/studies/vol50no2/html_files/Intelligence_War_2.htm>.

[23] Devaunt Z. LeClaire, "ISR Integration: The Marine Corps can learn from British forces," *Marine Corps Gazette* 95, no. 6 (June 2011), 52.

[24] Thomas Harding, "Col Gaddafi killed: convoy bombed by drone flown by pilot in Las Vegas," *The Telegraph* (London), October 20, 2011, available at <www.telegraph.co.uk/news/worldnews/africaandindianocean/libya/8839964/Col-Gaddafi-killed-convoy-bombed-by-drone-flown-by-pilot-in-Las-Vegas.html>.

[25] See the definition for the term *objective* in JP 1-02, *DOD Dictionary of Military and Associated Terms* (Washington, DC: The Joint Staff, November 8, 2010, as amended through January 31, 2011).

[26] Dempsey, 5.

[27] Jaylan Michael Haley, "An Evolution in Intelligence Doctrine: The Intelligence, Surveillance, and Reconnaissance Mission Type Order," *Air & Space Power Journal* 26, no. 5 (September–October 2012), 41.

[28] J. Richard Hackman, *Collaborative Intelligence: Using Teams to Solve Hard Problems* (San Francisco: Berrett-Koehler Publishers, 2011), 19. Hackman observed during his study of intelligence teams that an "up-front investment in developing a performance strategy that takes explicit account of a team's task requirements, its performance context, and the outcomes it is charged with achieving can generate substantial dividends later."

[29] Lieutenant Colonel Stephen C. Price, USAF, ISR liaison officer in Iraq, May–November 2007, email to author, January 23, 2007. This account is also based on author observations.

[30] JP 2-01, *Joint and National Intelligence Support to Military Operations* (Washington, DC: The Joint Staff, January 5, 2012), defines *joint intelligence operations center* as the focal point for intelligence planning, collection management, analysis, and production (xii).

[31] This assessment is based on the author's experience as an intelligence squadron commander responsible for deploying ISR liaison officers, executing ISR operations, and implementing ISR mission type orders in Iraq and Afghanistan from 2008 to 2010, as well as direct interaction with the ISR TF from 2010 to 2012.

[32] Michael T. Flynn, Rich Juergens, and Thomas L. Cantrell, "Employing ISR: SOF Best Practices," *Joint Force Quarterly* 50 (3rd Quarter 2008), 56–61.

[33] Haley, email to author. This is also based on the author's personal observations.

[34] Timothy Oliver, "A Blueprint for Success, Marine Corps intelligence operations in Anbar," *Marine Corps Gazette* 94, no. 7 (July 2010), 82, available at <www.mca-marines.org/gazette/article/marine-corps-intelligence-operations-anbar>.

[35] Ives.

[36] Flynn, Juergens, and Cantrell, 57.

[37] Michael T. Flynn and Charles A. Flynn, "Integrating Intelligence and Information: Ten Points for the Commander," *Military Review*, January–February 2012, 4–8.

MQ-1 Predator unmanned aerial vehicle at postflight inspection (U.S. Air Force/Stanley Thompson)

The Joint Stealth Task Force

An Operational Concept for Air-Sea Battle

By Harry Foster

It is time to come back to basics on Air-Sea Battle. Since the United States announced a pivot to the Asia-Pacific region, Air-Sea Battle has been derided as a strategy of tactics too focused on China, disparaged by the Army and Marines Corps as a budget ploy aimed at cutting ground forces, and even skewed as a diplomatic initiative.[1] Whether the scenario is in Asia, the Middle East, or even the Levant, Air-Sea Battle has been envisioned from its inception as a set of operational concepts to preserve combat effectiveness in areas where technology-based antiaccess/area-denial (A2/AD) strategies, coupled with disadvantageous geographic or diplomatic access, challenge U.S. ability to project power rapidly and persist with high operational tempo.

Many have construed the Department of Defense Joint Operational Access Concept—which emphasizes attacks-in-depth across broad areas, indirect approaches, and deception to reduce the pressure on forward basing—as the last word on Air-Sea Battle.[2] While this concept updates the American way of high-end warfare, it does not fully address the true A2/AD challenge: how to maintain *sensor and weapons density at distance*, *over time*, without forward bases or aircraft carriers. Overcoming this challenge requires more than achieving *cross-domain synergy*, a term describing better joint force integration and incorporation of emerging capabilities such as cyber warfare.[3] It also requires unconventional thinking about how the U.S. military Services combine sensors, weapons, and platforms to create new disruptive capabilities.

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In the spirit of bringing the Air-Sea Battle debate back to center, this article proposes the creation of a joint stealth task force initiative as part of the Air-Sea Battle concept set. Its purpose is to leverage the asymmetric advantages the United States enjoys in sensor technology, networking, long-range stealth, undersea warfare, and special operations to solve the density-at-distance, over-time problem. To understand why the Nation needs such an initiative, some background on the nature of A2/AD strategies is helpful.

Simply put, antiaccess/area denial is a set of overlapping military capabilities and operations designed to slow the deployment of U.S. forces to a region, reduce the tempo of those forces once there, and deny the freedom of action necessary to achieve military objectives. A2/AD capabilities are created by applying several affordable and readily available technologies to everything from missiles to mortars and from air defenses to conventional submarines. These capabilities, enabled largely by the proliferation of precision, make many U.S. fixed facilities vulnerable to attack in ways hard to imagine a decade ago. Similar capabilities also make surface naval forces such as aircraft carrier strike groups more susceptible to attack from significant distances.[4]

Antiaccess/Area-denial Lines of Operations

Line of Operation	Objective	Capability
Disrupt blue airbases	Slow force closure, deny air refueling, deny sensor and weapons density	Air, guided rocket, artillery, mortars, missiles, submarine, special operations
Deny sea approaches	Deny carrier approach, deny sensor and weapons density	Missile, submarine, small boat swarm
Deny/disrupt sea logistics	Deny operations	Special operations, air, missile, submarine
Disrupt space surveillance	Reduce sensor density	Ground- or space-based
Deny persistent intelligence, surveillance, and reconnaissance, and strike	Reduce/deny sensor and weapons density	Integrated air defenses, fighter forces, electronic warfare, cyber, counterspace
Decoy, deceive	Reduce sensor and weapons density	Physical and cyber means
Immunize against attack	Deny U.S. military objectives	Bury, harden, disperse
Deny command and control/networked communications	Deny or confuse operations	Cyber/electronic warfare

Lines of Operation

As illustrated in the table, at least eight overlapping lines of operations comprise an A2/AD strategy. While each is intended to achieve a specific objective, the overall effect of these operations is to reduce the density of U.S. sensors and weapons at range. If A2/AD can disrupt either the "find" or "strike" component of the kill chain, then the strategy is effective.

Two factors make A2/AD a novel military strategy. First, these lines of operations strike directly at vulnerabilities in the U.S. concept of employment, which is highly dependent on forward bases, unimpeded seaborne logistics, and the time required to build forces. Efforts to defend forward bases and sea logistics impose heavy costs on the United States, forcing the deployment of lift-intensive air and missile defense units, driving a logistics-intensive dispersal of the force, and tying down naval forces to defend logistics convoys or provide air and missile defense. All these efforts sap already limited offensive power.

Second, a nation does not need to conduct operations across all of the lines to conduct A2/AD successfully. Merely disrupting U.S. operations enough to affect the availability of low-density/high-demand capabilities, such as air refueling, airborne surveillance, or airborne antisubmarine warfare capabilities, can be adequate to undercut U.S. operations.

Defeating A2/AD Strategies

The rationale for developing a joint stealth task force is grounded in a denial strategy. If the United States can maintain sensor and weapons mass at distance over time in the opening days of conflict, regardless of the status of its forward bases or aircraft carriers, then it can achieve its objectives while denying an adversary the benefit of its A2/AD investment. This approach is completely consistent with the goals of the Joint Operational Access Concept. The difference is that in addition to seeking cross-domain synergy, a joint stealth task force requires the Services to recognize the technological shifts taking place that enable new, collaborative uses of sensors, weapons, and platforms.

Key U.S. Gaps

Achieving joint operational access without forward land or sea bases is daunting. Five key capability gaps illustrate this difficulty.

Keeping Offensive Momentum Going. The first gap is how to keep meaningful offensive momentum if forward airfields are denied, aircraft carrier strike groups are pushed back, and space surveillance capabilities are degraded. While the United States still has freedom of action to strike fixed targets with standoff weapons, many of the key facilities posing a threat to joint operational access are mobile or hard and deeply buried, requiring either overflight or near flight of a sensor or strike platform.

Gaining Local Air Superiority for Operations. This near-flight requirement gives rise to the second gap: how to gain access for airborne sensors and weapons despite future integrated air defense systems that include advanced fighters, advanced surface-to-air missiles, active and passive cuing systems, and directed energy weapons. Most, if not all, of the concepts to achieve this objective require combinations of long-range stealthy bombers, short-range stealthy fighters, and standoff missiles. Conventional wisdom suggests that without escort fighters, it is not possible for larger reconnaissance or strike platforms to "get through." But the problem of gaining air control without forward basing does not end here.

Littoral combat ship USS *Freedom* conducts counter illicit trafficking operations in Pacific (U.S. Navy/Michael C. Barton)

Maintaining an In-depth Defense against Cruise Missile Attacks. The third gap deals with how to deny airborne launch of cruise missiles (both land-attack and antiship) from airborne platforms. Concepts to accomplish this task normally consist of layered approaches that include attacking the host airfields, denying targeting data, attacking the launch platform, and attacking the missile itself either in midcourse flight or at endgame. With degraded forward airfields, however, U.S. action may be limited to conducting standoff strikes against fixed bases, disrupting command and control of forces, or conducting terminal defense. Without a substitute capability to conduct air control in the absence of forward bases, the U.S. air defense concept loses its depth, requiring commanders to double down on endgame defense.

Defending Forward Airborne Enablers. The fourth gap addresses defense of nonstealth airborne enablers operating inside of the A2/AD ring. These include antisubmarine warfare (ASW) capability such as maritime patrol aircraft and helicopters, air refueling aircraft, and airborne sensor aircraft. ASW platforms are an essential component of the outer defenses of a carrier strike group. Without the ability to project credible air defense for these platforms, a higher risk of submarine attack may limit the U.S. ability to bring aircraft carriers closer to the fight. Similar concerns apply to air refueling and Airborne Warning and Control System (AWACS) aircraft, whose forward presence is essential for maintaining persistence at range.

Countering Surface Action Groups Inside the A2/AD Ring. The final gap deals with a shortfall in the U.S. ability to locate and destroy naval surface action groups operating inside the A2/AD ring. Modern Chinese surface action groups can extend the A2/AD ring by providing long-range air defense using active electronically scanned array radars and sophisticated surface-to-air missiles. Defeating these surface action groups requires a joint U.S. Navy–Air Force effort.

To overcome these gaps, the United States must explore new ways to develop capabilities that can provide density and persistence at range, reducing the effects of degraded forward-basing. Achieving this goal requires not only linking long-range air capabilities, undersea stealth, and special operations forces operating ashore, but also leveraging advances in technology.

A Viable Concept?

As bomber, submarine, and special operations capabilities stand today, the rationale for a joint stealth task force may seem less than compelling. While bombers and submarines can keep offensive momentum going when forward bases are denied by attacking fixed targets using standoff missiles, all have significant limitations attacking hardened or mobile targets in an A2/AD environment. The U.S. stealthy bomber inventory is small and must operate from range, which greatly reduces sortie rate. Submarines, on the other hand, offer persistence, but have limited payload capacity and require significant time to reload. While special operations forces offer a covert means of surveillance, they have limited mobility and attack capability. Finally, none of these forces possess the counterair capability needed to establish local air superiority, attack key enemy airborne nodes such as airborne early warning, or defend U.S. forces from enemy fighters. Technology now offers the ability to reduce these limitations but only if Sailors, Airmen, and special operators look beyond platform capabilities and toward concepts of operations that connect sensors and weapons in new, disruptive ways.

Five Enabling Technologies

Technologies are emerging that could prove revolutionary if integrated with a vision toward maintaining sensor and weapons mass at distance over time without forward bases. These include technologies to find, fix, and communicate precise target location as well as technologies that serve to gain access. Undergirding several of these technologies is the availability of

F-22 Raptor over Andersen Air Force Base, Guam, participates in 3-month theater security package (U.S. Air Force/Kevin J. Gruenwald)

increasingly sophisticated unmanned vehicles capable of carrying sensors and weapons that perform a host of functions including acting as decoys, finding and striking targets, and degrading adversary situational awareness electronically. To understand how these technologies enable a joint stealth task force, we must first gain better insight into what these technologies are and how they relate to one another.

Find, Fix, Communicate. These technologies include the combination of advances in find-and-fix sensors and networking gateway technologies that allow distributed sensor data to be federated and shared with anyone connected to a network. The capability to sense the target environment with high fidelity across the electromagnetic spectrum from radio frequency to infrared (especially low- to mid-band) to the visible spectrum has exploded in recent years.[5] These sensors are becoming smaller with reduced power demands, allowing their deployment on smaller vehicles for the first time.

Networking gateway technology, like follow-ons to today's Battlefield Airborne Communications Node, can merge this multispectral sensor data from multiple platforms and share it beyond line of sight and regardless of the data link protocol.[6] Taken together, these developments represent a tactical breakthrough that is not yet fully appreciated. For the first time, any sensor can be connected to any weapon to provide target-quality data regardless of the platform. This means any weapon that is in range and has capability against a target can be brought to bear with any platform provided the required connectivity is established.

Swarm and Hypersonics. While the United States has enjoyed an airborne stealth advantage against integrated air defenses for more than two decades, swarm and hypersonic speed are two other approaches that can complicate adversary air defense targeting. Swarm logic has typically been associated with micro–unmanned aerial vehicles. However, the same approach could be used to organize flights of larger unmanned aerial vehicles, which could be used for a number of purposes simultaneously.[7] When connected to a find, fix, communicate network, these swarms can continuously report on ground, sea, and air targets; they can serve as weapons platforms to attack air defense systems from multiple axes; or they can serve as a "counterair picket" to pass missile targeting data to any platform carrying a counterair missile. Although these swarms will inevitably take losses, their distributed nature makes it difficult to destroy every member of the group, allowing for graceful degradation of the swarm's overall capability.

Whereas the objective of swarming vehicles is to overwhelm enemy air defenses, the high-speed regime of

hypersonic missiles offers survivability on par with stealth.[8] In addition to being highly survivable, hypersonic speed provides for timely attacks against mobile targets. For example, while a cruise missile flying at 0.7 Mach requires 28 minutes to reach a target 200 nautical miles away, a hypersonic missile traveling at 7.0 Mach requires only about 3 minutes. Taken together, swarm and hypersonic missiles provide a distributed means to conduct surveillance and reconnaissance against mobile targets deep into enemy territory and a timely and survivable way to strike once a target is located.

Counterair. Since the advent of the airplane, military planners have pushed for faster, more maneuverable fighter aircraft in order to maneuver the aircraft into a limited weapons employment zone for both gun and missile attacks against an opponent. Beginning with the advent of all-aspect missile seekers in the 1990s, however, the need for platform speed and maneuverability became less relevant as beyond-visual-range missile attacks became the norm.[9] By combining developments in find, fix, communicate, swarm, and counterair technologies—and by using larger missiles such as the Patriot PAC-2 or PAC-3 to offset the speed advantage of enemy fighters—an opportunity exists to expand counterair capabilities to nontraditional platforms such as existing transport aircraft, bombers, or future long-range strike vehicles.[10]

Undersea. As the Navy retires its *Ohio*-class SSGNs (nuclear-powered guided-missile submarines) and *Los Angeles*–class nuclear-powered attack submarines, it will sustain a 66 percent reduction in undersea payload capacity between 2024 and 2030 unless programmatic changes are made.[11]

The Navy has several options. First, it could design and build a new class of SSGN, possibly based on the *Ohio*-class replacement ballistic-missile submarine design. However, most defense analysts consider that option unaffordable. The second option would insert payload modules in the last 20 *Virginia*-class attack submarines. This option would expand a single *Virginia*-class submarine's Tomahawk cruise missile capacity from 12 to 40 missiles. More importantly, *Virginia* payload module tubes could launch a variety of missile form factors such as miniature air-launched decoys, cruise missiles to carry intelligence, surveillance, and reconnaissance sensors or weapons, or future attack payloads such as hypersonic-glide vehicles. All these systems could contribute to locating, attacking, and degrading A2/AD systems. The incoming U.S. submarine force commander indicated that he plans to pursue the *Virginia* payload module option.[12]

A third, longer-term option the United States should explore is leveraging advances in unmanned undersea vehicles (UUVs) to augment manned submarine payload capacity. While these vehicles possess limited capability compared to manned submarines, hybrid UUVs (HUUVs) could be designed to work in concert with manned submarines. For example, a large HUUV with vertical-launch missile tubes could be towed by submarines submerged. They could remain tethered to the host submarine, or they could be moored to the seabed near the submarine's operating area. During heightened tensions, submarines could tow the HUUVs while on patrol to augment their internal payload capacities. During conflict, after the submarine expends its internal and towed payload, it could drop off the empty HUUV, pick up a new one from an undersea storage site, and return quickly to the fight. Without such a concept, the submarine would have to traverse thousands of miles to a distant reload port, taking it out of the fight for many weeks.[13]

Speed of Light. The final technology area is sensitive and deals with advancements in cyber capabilities, electronic warfare, and directed energy. The capabilities in this area are changing rapidly, are disruptive, and will likely prompt a move-countermove competition between nations over time. This makes it difficult to predict what opportunities and challenges lie ahead in this area. What is clear, however, is that these capabilities will play an essential role in the joint stealth task force's ability to maintain sensor and weapon density at range without forward bases.

These five areas provide the means to close the capability gaps that currently hinder full execution of the Joint Operational Access Concept. The next sections explain how these technologies could come together to enable an effective concept of operations for a joint stealth task force.

Architecture

The joint stealth task force is not platform-centric. Instead, it is a construct of six major capability groups.

First, a connected find-and-fix network may be distributed among platforms deployed on land, at sea, in the air, in space, or in the cyber domain. The data produced may connect directly to the weapons network or be further processed and fused with other sensor data depending on the type of data and its end use.

Second, a connected weapons network consists of land-attack, countersea, and counterair capabilities. These weapons may be standoff or stand-in and actively or passively guided depending on the target type and geospatial orientation of the weapons network. The network also includes speed-of-light capabilities to attack cyber target sets using a variety of electronic and photonic means.

Third, a gateway communications construct connecting finders to shooters integrates sensor and weapons networks. This backbone is not a centralized enterprise communication architecture. Instead, it relies on redundant, overlapping communications pathways that employ decentralized communications gateways to translate and facilitate data exchange across a variety of networks. This approach provides for a data network tailored to operational requirements while enabling the plug-and-play exchange of sensor, finished intelligence, command, and targeting data that is resilient in dense electronic warfare or space-denied communications environments. Its distributed, ad hoc, constantly changing composition also makes it more resilient to cyber attack.

Fourth, special operations forces may prove useful in an A2/AD environment by placing sensors, creating access points

into closed networks, and performing other functions to disrupt enemy operations. By integrating into the joint stealth task force's sensor and weapons networks, special operations forces can call for supporting fires and other support.

Fifth, a fleet of undersea or airborne trucks may carry communications nodes, sensors, munitions, or other unmanned vehicles. These trucks are distinguished from today's platforms in that they may perform a number of ancillary tasks not directly related to their primary mission. For example, an air refueling tanker could serve as a communications node for a submarine, sensor platform for early warning, or even launch platform for small unmanned vehicles that will form a counterair picket.

Sixth, a command and control function plans and synchronizes the task force's activities. This activity may be hosted on a truck platform or reside on land if communication with the task force is assured. Employment at the tactical level is led by tactical commanders who operate independently based on understanding the commander's intent.

Concept of Operations

The joint stealth task force aims to achieve three essential concepts: holding deeply buried targets at risk, holding mobile targets at risk, and conducting counterair tasks to protect friendly forces and gain access into the A2/AD ring.

Concept One: Gain Access to Hold Hard and Deeply Buried Targets at Risk. As discussed earlier, holding hard and deeply buried targets at risk requires a penetrating aircraft capable of delivering heavy munitions specifically designed for these targets. To gain access, these aircraft may be forced to overcome the challenges of defeating naval surface action groups, land-based fighter aircraft, and a modern integrated air defense system with active and passive detection ability.

Accomplishing this objective begins by preparing the battlespace. Submarines, possibly with HUUVs, deploy to their operating areas. Special operations forces may also be positioned during this phase to accomplish specific tasks to prepare for follow-on operations. Once a strike is directed, submarines assume a high data rate communications posture and long-range unmanned aerial vehicles deploy to establish the basic communications backbone.

Gaining access begins by locating specific elements of the integrated air defense system. To detect mobile threats, a nonstealth air truck such as a C-17 deploys a swarm of unmanned aerial vehicles over the horizon that fly in at various altitudes to stimulate and detect threat emitters. As key threat emitters along the ingress route for the penetrating platform appear, the command and control node selects the best available weapon from the network (consisting mainly of submarines at this point) and directs the attack. To provide additional weapons and to attack fixed elements of the integrated air defenses system, nonstealth air trucks such as B-1s or B-52s move closer to enemy air defenses. Synchronized with these actions, speed-of-light weapons degrade enemy command and control systems.

With the A2/AD network stimulated, submarines launch miniature air decoys to confuse the air picture further. Simultaneously, an air truck delivers a second swarm of counterair pickets equipped with passive and active seekers. This swarm deploys ahead of two B-2 bombers loaded with 32 Patriot PAC-2 missiles each. These aircraft and their associated swarm conduct counterair sweep for a stealth air truck attacking hard and deeply buried targets far in the adversary interior. As the counterair pickets encounter enemy fighters, the B-2s, 80 miles behind, fire their PAC-2s.

After the strike, while U.S. aircraft egress, submarines continue their air defense role as air trucks deploy a third set of counterair pickets. As the strike force exits, counterair pickets create a defensive line to protect departing aircraft and approaching tankers.

Concept Two: Hold Mobile Targets at Risk. Mobile targets present a difficult problem given the breadth and depth of some nations' developing A2/AD systems. Detecting these targets requires widespread surveillance and reconnaissance and using space-, air-, and ground-based sensors. In the A2/AD environment, swarms of UAVs use cooperative search strategies to locate and find these mobile targets, while another swarm maintains links to the weapons and command and control networks. Attrition by enemy air defenses is inevitable in these swarms, but their distributed nature allows the mission to continue.

When a target does appear, it must be struck quickly. Accordingly, airborne and undersea trucks must be positioned as close to the coast as possible, well inside the range of enemy fighters. Submarines routinely operate close-in and can attack these targets with cruise missiles. However, as discussed earlier, magazine size can quickly become an issue unless submarines are augmented by HUUVs. Stealth air trucks carrying PAC-2 and associated swarms of counterair pickets could also support this mission. By operating in an integrated way, this undersea and airborne stealth team can provide a bubble of air superiority to allow persistent airborne weapons presence close to the coast. This reduces missile time of flight and denies adversaries the benefit of their A2/AD strategy.

Concept Three: Defeat Cruise Missiles and Protect U.S. Forward Aircraft. The joint stealth task force can also be incorporated into a layered defense to defeat enemy cruise missiles and protect U.S. antisubmarine warfare, air refueling, and AWACS aircraft. Building on ideas presented in the first two concepts, the following explains how these counterair capabilities can be brought to bear.

Defeating a cruise missile threat begins by attacking the enemy aircraft or submarine prior to launch. Just as the joint stealth task force created an air superiority bubble for air trucks to loiter close to the coast in concept two, the same approach could be used to attack aircraft carrying cruise missiles. Should a cruise missile be launched, however, another line of counterair pickets could detect and cue the weapons network to attack it. As the defense moves further away from enemy A2/AD systems, nonstealth air trucks could launch weapons and be integrated with Aegis and Patriot systems to provide rear-area defense.

B-2 Spirit over Andersen Air Force Base in Guam as part of continuing operations to maintain bomber presence in region (U.S. Air Force/Kevin J. Gruenwald)

Finally, protecting U.S. aircraft operating forward requires a layered defense as well. The same linear defense used to stop cruise missile attacks might also serve as a frontline to protect these aircraft against attacks. A second line of counterair pickets and nonstealth air trucks armed with counterair missiles may also be needed to provide endgame defense.

It is time to come back to basics on Air-Sea Battle. Defeating A2/AD is about keeping sensor and weapons density at range persistently without forward bases or aircraft carriers. This joint stealth task force concept represents the kind of new, platform-agnostic thinking needed to accomplish the task. Making it a reality will require research and investment shifts across the Defense Department budget. For example, the United States lacks sufficient range capacity in its air portfolio, and it lacks undersea payload capacity to execute this concept today or in the near term. Some of the unmanned systems described herein require development, and hypersonic research is just beginning to show promise. On the other hand, networking technology already supports the operational concepts proposed and is getting better quickly. Although more research and development is needed, the technologies required to support this concept are real. It is time for warfighters to take notice, start debating alternative concepts, test promising concepts using wargames, and ultimately conduct joint experiments to field new capabilities. **JFQ**

Notes

[1] "The China syndrome: AirSea Battle is now the Pentagon's priority, but it has its critics," *The Economist*, June 9, 2012, available at <www.economist.com/node/21556587>.

[2] The Joint Operational Access Concept is described as a broader overarching concept under which Air-Sea Battle falls. See Department of Defense (DOD), *Joint Operational Access Concept Version 1.0* (Washington, DC: DOD, January 17, 2012), 6, available at <www.defense.gov/pubs/pdfs/JOAC_Jan%202012_Signed.pdf>.

[3] Ibid., 14.

[4] Andrew F. Krepinevich, *Why AirSea Battle?* (Washington, DC: Center for Strategic and Budgetary Assessments, 2010), 13–25.

[5] Jonathan W. Greenert, "Payloads Over Platforms," U.S. Naval Institute *Proceedings* 138, no. 7 (July 2012), available at <www.usni.org/magazines/proceedings/2012-07/payloads-over-platforms-charting-new-course>.

[6] "Bringing Home the BACN to Front Line Forces," *Defense Industry Daily*, July 2, 2012, available at <www.defenseindustrydaily.com/Bringing-Home-the-BACN-to-Front-Line-Forces-05618/>.

[7] "Boeing Shows UAS Swarm Technology," United Press International, August 22, 2011, available at <www.upi.com/Business_News/Security-Industry/2011/08/22/Boeing-shows-UAS-swarm-technology/UPI-55701314017280/>.

[8] Committee on Future Air Force Needs for Survivability, National Research Council, *Future Air Force Needs for Survivability* (Washington, DC: National Academies Press, 2006), 63.

[9] John Stillion, Northrop Grumman Analysis Center, "Trends in Air to Air Combat," briefing, March 2011.

[10] The idea to employ Patriot missiles from airborne platforms is not novel. See "Patriot Air-Launched Hit-To-Kill (ALHTK) (United States), Air-to-air missiles—Beyond visual range," *Jane's Air Launched Weapons*, September 6, 2010, available at <http://articles.janes.com/articles/Janes-Air-Launched-Weapons/Patriot-Air-Launched-Hit-To-Kill-ALHTK-United-States.html>.

[11] Naval Submarine League, "U.S. Submarine Force Way Ahead," briefing, August 17, 2011.

[12] Michael J. Connor, "Investing in the Undersea Future," U.S. Naval Institute *Proceedings* 137, no. 6 (June 2011), available at <www.usni.org/magazines/proceedings/2011-06/investing-undersea-future>.

[13] Karl Hasslinger and Paul Everson, "Junior Officers Design Submarine Force for Next 100 Years," *Undersea Warfare* 2, no. 4 (Summer 2000), available at <www.navy.mil/navydata/cno/n87/usw/issue_8/future_force.html>.

Airman fastens GPS mechanism inside RQ-11B Raven B hand-launched remote-controlled unmanned aerial vehicle (U.S. Air Force/Gustavo Castillo)

Unifying Our Vision

Joint ISR Coordination and the NATO Joint ISR Initiative

By Matthew J. Martin

Every night and day that you flew into Kosovo or into Serbia, you had to accept that you were in the lethal range of a surface-to-air missile, because they were moving all the time. We could not identify their locations all the time, so the kids just accepted that.

—Lt Gen Michael Short, USAF
Joint Force Air Component Commander, Operation *Allied Force*

Lieutenant Colonel Matthew J. Martin, USAF, is Chief of Allied Airborne Reconnaissance and Electronic Warfare, NATO Air Command, Izmir, Turkey.

Imagine an aging but still lethal SA-6 surface-to-air missile (SAM) sitting a few miles from an international border in a suburb of a city in a conflict zone. The SA-6 is active and protects the illegal and belligerent activities of its master. Across the border and 60 miles up-range, a Norwegian DA-20 on a North Atlantic Treaty Organization (NATO) mission detects and geolocates the SAM. Due to the location and concern for potential collateral damage, the NATO joint task force (JTF) commander directs that a positive identification (PID) and collateral damage estimate (CDE) be conducted before he is willing to authorize an airstrike. But there is poor weather in the area. The NATO fighters on station with their targeting pods are unable to peer through the clouds and visually identify the SAM. What to do?

What if there was an allied special operations force on the border? And what if

it could launch a small Raven unmanned aircraft to fly to the SAM site below the clouds and provide the PID and CDE? If the aircraft could transmit images back to a NATO intelligence exploitation center, imagery analysts could accomplish the task. Moreover, if they had access to the data from the Raven, they might even be able to convert that data into a set of high-fidelity coordinates. This would enable the employment of GPS-guided weapons to destroy the SAM. It would only be a matter of transmitting those coordinates (somehow) to a NATO fighter and directing that fighter to engage the target.

This scenario and others like it were demonstrated June 18–29, 2012, at the NATO Joint Intelligence, Surveillance, and Reconnaissance (JISR) trials held in Ørland, Norway. The training and live trials involved land, maritime, and air forces and were conducted not only to demonstrate improved NATO JISR integration but also to build and refine tactics, techniques, and procedures (TTPs).

NATO is already deep into planning Unified Vision 2014 (UV14) with the hope of refining TTPs and the technical aspects of JISR integration to the point where they can then be incorporated into NATO doctrine and tactics manuals and be available to NATO commanders for future conflicts. But it has been a long road to get to this point, and the work of allied JISR integration is far from over.

This article provides an overview of the aims and results of Unified Vision 2012 (UV12), identifies the key requirements of operationally relevant JISR integration, and makes a few modest proposals for a way forward. As this article makes clear, the key to JISR integration is not only the technical connection of various ISR data sources (as important as that is), but also the operational integration, command and control (C2), and tactical employment of ISR capabilities. That simply is not possible without a sound and mature body of doctrine, TTPs, and training for those who will operate, employ, integrate, and control JISR.

The Initiative

Recent operations have highlighted NATO's limitations when it comes to conducting well-integrated JISR operations. In an April 2012 letter to the NATO Secretary General, the permanent representatives of the so-called Multi-intelligence All-source Joint ISR Interoperability Coalition (MAJIIC) nations stated:

Operations in Afghanistan, and more recently in Libya, underlined several shortfalls in Alliance JISR processes, which have also been identified as BI-SC Priority Shortfall Areas: among others, scarce JISR assets, lack of efficient intelligence sharing for dynamic targeting, insufficient JISR dedicated staff preparedness, and over-dependence on a few nations for skilled officers trained in dynamic targeting operations.[1]

The letter goes on to propose a "Smart Defense Initiative" to "put a concrete JISR capability in place for use by all Alliance nations."

Of course, the NATO ISR gap is nothing new and was made obvious as early as Operation *Allied Force*, where the United States contributed approximately 95 percent of the ISR capability as measured in hours flown.[2] While NATO has made great strides in equalizing the pro-rata contributions of Allies to operations in other mission areas (particularly in precision-strike and electronic warfare), the enabling capabilities such as air mobility, command and control, and ISR in particular remain stubborn areas of overreliance on the United States. This is evidenced by the comparison of sorties flown in *Allied Force* to those flown in Operation *Unified Protector* in 2011.

The bulk of mobility, C2, and ISR capacity came from the United States, but an even more important point is that the Alliance relied on America to provide the communications networks, trained personnel, and the body of tactical expertise needed to integrate those capabilities into a coherent operation. According to Lieutenant General Ralph Jodice, the Joint Force Air Component Commander for Operation *Unified Protector*:

We were able to do things like cross-cuing, but it took us a few months to get that going and get it right. And I think the point that you've been working on with Unified Vision is that we need to have those things in place right now so that when the next operation comes about—humanitarian assistance, disaster relief, or a kinetic operation in support of whatever it might be up through Article 5—that we have all those things in place so that you don't have to develop these TTPs as you're conducting the operation.[3]

Even before *Unified Protector*, the trend was clear: ISR standardization, connectivity, and integration were areas in need of laser-like focus for the Allies. Informally at first, then codified at the 2012 Chicago Summit,[4] the NATO JISR initiative was born.

At first the work of the NATO Joint Capability Group for ISR (JCG-ISR—reporting indirectly to the North Atlantic Council and made up of national delegations and a few representatives from NATO organizations) was technical in nature. A few small working groups under the JCG-ISR put forward a great deal of effort to improve NATO's ISR interoperability. The result was the NATO ISR Interoperability Architecture, a series of standardization agreements (STANAGs) governing everything from data link format to database configuration to the kinds of film still used in some imagery sensors.

But there is more to ISR integration than data formats. Likewise NATO depends on allied nations who have ratified and declared compliance with the various STANAGs to self-certify their forces when contributing them to Alliance operations. NATO requires a forum—beyond regular exercises where the focus is on evaluating the ability of specific combat units to perform NATO missions—where nations and NATO organizations can connect and test out forces in an operational environment with an aim of practicing ISR integration and

confirming STANAG-based interoperability.[5] At the 2010 Lisbon Summit, the JCG-ISR was given the task of providing just such a forum—which brings us back to Unified Vision 2012.[6]

Unified Vision Series of Trials

Unprecedented in size and scope, UV12 brought together the capabilities of 14 NATO nations and approximately 1,250 personnel to Main Base Ørland, Norway, for 9 days of live-trail execution. The trials were conducted in accordance with a plan that called for a realistic operational environment to test technical objectives. The bulk of the effort was invested in network design, data flow, and connectivity.[7] Since the JCG-ISR is made up of national delegations versus NATO operational commands, the planning of UV12 was heavy in technical expertise but light in operational experience. While the networks assembled for UV12 enabled some of the best ISR connectivity ever seen in a NATO event, the operational and tactical C2 structures needed to coordinate joint sensors real-time per command priorities were absent at the start of the trial.

The trial was organized around mission threads—one for every area of JISR to be tested per the objectives. The vignettes were standalone events, with four or five conducted each day of the trial. As the focus was on the technical aspects of connectivity and data flow, the trial plan did not call for a continuous scenario. Each day was a fresh start, with no scenario elements carrying over from one day to the next. Likewise, because the vignettes were not part of an overall scenario, ISR data collected in one vignette was not transferable to any other.

The trial plan specified 159 technical objectives covering areas such as multi-intelligence connectivity, delivery of data in STANAG-compliant formats, and latency and accuracy of data delivery. There were even operational objectives concerning speed of the kill chain and the distribution of a common operating picture. Of these objectives, 97 were passed with 14 others blocked due to circumstances beyond the control of the trial team, such as weather. This resulted in an overall 61 percent success rate. Of course, the results were due in part to normal growing pains—becoming familiar with the geography, mission tools, and relationship-building. But much of it resulted from the fact that the trial did not have an operational or tactical ISR C2 construct in place at the beginning. In fact, the C2 arrangement ultimately used was built on the first day of the trial and refined over the first week to become effective.

While it is easy to point fingers for this seemingly obvious oversight, the trial planners are not to blame. The combined facts of a compressed planning schedule (all of the most significant planning activities took place in the 3 to 4 months prior to execution) and the dearth of operational experience among those who volunteered to conduct the planning explain the shortfall. This article does not delve into the specifics of NATO developmental planning. Suffice it to say that conducting a full planning cycle along with ensuring a high level of operator participation from the beginning were significant lessons learned from UV12.

While this ad hoc structure got the job done, it bears little resemblance to the NATO Response Force joint command structure that will be used in future allied operations. The trial plan did not call for the C2 elements at the joint level—mainly a joint operations center (JOC) and component headquarters with links to their tactical C2 elements such as a combined air and space operations center for air players or a maritime operations center. Likewise the trial plan did not have any provisions for tactical real-time coordination. While the ISR data flowing to the all-source fusion cell (ASFC) could result in a decision to shift assets, there was no initial way to communicate any such change to the assets themselves.

The C2 structure was developed to provide an operational link between the ASFC and tactical players. A J2/J3 role player was put in place to express a changing commander's intent and to determine the priority of asset allocation among the various vignettes. When integrated with the collection management cell, this mini-JOC arrangement had the ability to provide guidance to the components. All that was needed after that was a connection between the components and their assets. This was done through Norwegian air traffic control for air players, "JChat" to the Norwegian maritime operations center for maritime forces, and personal cell phones for ground players.

This was far from ideal, but it got the job done. For UV14, however, things will need to be different. In the subsequent working group meetings to capture lessons from UV12, a consensus was built that UV14 should have an operational focus. In fact, ISR C2 will be foremost on the list of objectives.

Operationalizing JISR

UV12 did a great job of bringing together the latest in NATO ISR information technology and connecting it, per the NATO STANAGs, in an operationally relevant and useful way. Data from any JISR sensor, so long as it is compliant with the STANAGs and connected to the network, can now get to any NATO joint agency or player. But to whom should that data be sent? And what should it be used for? More important, how can we translate that data into desired effects to achieve the commander's intent? UV14 needs to answer these questions, and the JISR construct that follows can help. It all begins with the commander's intent.

Before any operation can begin, NATO will need to know how to determine commander's intent based on a desired strategic outcome. But the Alliance is a defensive organization. It is unlikely that ISR professionals charged with carrying out the commander's intent will know what that intent is until operations begin. So what is to be done? Be flexible. The best way to achieve flexibility is through complete operational as well as technical joint integration. Now that we have the ability to send any piece of ISR data wherever it needs to go, we must also build the ability to use that data to support any joint player. To do that, every JISR sensor will need to have the ability to be responsive to every joint C2 entity

NATO E-3A Sentry AWACS patrols over Germany (U.S. Marine Corps/Colby Brown)

that may be participating in a NATO operation. We need an *operational view*.

First, the sensor needs the ability to push ISR data to tactical players such as special operations or general purpose ground units, to tactical aviation, to maritime forces, or to operational air units be they fixed-wing strike or other ISR platforms. The JISR sensor will also need to be able to push its tactical ISR data to tactical (such as a battalion tactical operations center), operational (such as a component headquarters), or even strategic (the JTF HQ or NATO HQ) echelons of C2. But just as important, the JISR sensor must have the ability to be responsive to every level of joint C2. At every phase of the campaign, when the JTF commander determines where the weight of effort will be and which component commander will be the supported commander, the JISR sensor must be able to flex to the appropriate level of C2. ISR assets that are typically tasked at the operational level—such as the RC-135 or the NATO RQ-4 Alliance Ground Surveillance aircraft—must be able to integrate at the tactical level and provide direct support to tactical units. Likewise, a traditionally tactical ISR sensor such as the hand-launched Raven unmanned aircraft must be able to support operational objectives and be tasked by the air component commander when needed.

Exploitation elements such as the U.S. Air Force Distributed Common Ground Station (DCGS) must be operationally integrated as well. In a STANAG-compliant ISR data environment, this will allow a U.S. exploitation team to receive and process ISR data from allied sensors so they can produce joint, allied ISR products and push them to the joint-level fusion cell to feed the decisionmaking process.

As all this happens, all JISR players must possess a high level of situational awareness regarding the tactical scenario. This will allow them to make the best possible real-time decisions on how to employ their sensors in a collaborative way to achieve the commander's intent. To do this, each JISR player must be fully integrated into the Joint Common Operational Picture (JCOP)—more on that in a bit.

The NATO Joint Task Force and C2 of ISR

As every good operator knows, achieving tactical success calls for starting at the target and working backward. But operational effects flow from the commander's intent. Therefore, to achieve operational success, the C2 structure must be built from the top down.

This brings us to NATO doctrine. While still not fully developed regarding operational integration of JISR, it does provide with a few key concepts to build on. For example, Allied Joint Publication–3 (B), *Allied Joint Doctrine for*

the Conduct of Operations, identifies the key C2 elements required at the joint level.[8]

Of course the JTF commander is at the center. Moreover, while there are many joint-level players and organizations important to a campaign, there are only a few that bear directly on the operational C2 of ISR. For instance the JOC serves as the primary C2 instrument to transmit the commander's intent to all tactical elements in real time. Likewise, there must be joint-level coordination cells for ISR and Signals Intelligence/Electronic Warfare (SIGINT/EW), as well as other specialized operations such as personnel recovery or civil-military relations.

But for our purposes, the joint-level ISR and SIGINT/EW cells are the most important, as they will conduct real-time joint coordination with ISR- and EW-tasked assets. Of these two, the SIGINT/EW Operations Center (SEWOC) is the more mature concept.[9]

The Role of the SEWOC

While the specific guidance on the role of the SEWOC is not publicly available, we can deduce a number of things it would need to do to achieve JISR and EW integration:

- own and maintain the Electronic Order of Battle (EOB)
- act as the Signals Identification Authority (SIA)
- manage the electromagnetic spectrum for joint players
- facilitate joint SIGINT and EW cross-cueing
- conduct real-time coordination of the component EW Coordination Centers (EWCCs) as well as the EW-tasked assets themselves
- coordinate GPS-denial and other navigation warfare responses
- ensure a high level of situational awareness among all EW-tasked players
- provide advice and recommendations on all matters relating to SIGINT and EW.

To accomplish these functions, the SEWOC will need access to the same real-time data as the joint-level ISR cell and the JOC. It also will need the ability to pull situational-awareness data from the JCOP as well as manually push new data into it. Much of this will be accomplished via a STANAG-compliant Cooperative Electronic Signals Measures Operations network whereby EW data will be filtered, fused, and routed to the SEWOC for processing.[10]

The SEWOC could be configured any number of ways, but it must have the core functions of information management; liaising with EWCCs; expertise on component capabilities and operations to facilitate joint cross-cue, SIGINT, and SIGINT-fused analysis to both positively identify signals and build the EOB; and the ability to nominate EW targets for insertion into the collection management and targeting processes. During joint operations, it should therefore be composed of experienced EW and SIGINT operators as well as SIGINT analysts who not only understand the role of SIGINT and EW but also are empowered to make decisions and direct actions for EW-tasked assets

While the doctrine regarding the SEWOC function and set-up in NATO is fairly mature, there is little guidance available on the TTPs of SEWOC interaction at the joint level. A key objective for UV14 should therefore be to refine and practice the TTPs needed to integrate the SEWOC and its subordinate EW forces into NATO operations at the joint level.

The Role of the Joint All-source Information Center

We will need a comparable entity at the joint level to coordinate ISR. There have been many concepts used in previous operations with names such as the Joint Intelligence Center, the Joint Fusion Center, and the ASFC, which was used in UV12. However, since NATO AJP-3(B) specifically talks about a Joint All-Source Information Center (JASIC) organized under the J2 and responsible to the Joint Collection Manager, we will stick with JASIC.

Just as the SEWOC would act as the joint-level coordination cell for the EW effort, the JASIC will conduct all joint-level ISR coordination. Specially, it should do the following:

- own and maintain the ground, maritime, air, space, and cyber operations orders of battle
- act as the ultimate PID authority for opposing force targets
- facilitate joint ISR cross-cueing
- conduct real-time coordination of the component ISR divisions as well as the ISR-tasked assets themselves
- ensure a high level of situational awareness among all ISR-tasked players
- provide processed and fused ISR products to the J2 and J3 for planning purposes
- coordinate with the joint collection management to shift the ISR weight of effort as needed to carry out the commander's intent.

Like the SEWOC, the JASIC will interact with both the planning (J2/3/5 collection management, targeting, and operational planning staff elements) and real-time coordination (JOC and SEWOC) at the joint level. It will also coordinate with the ISR planning and coordination elements at other echelons such as the A2, G2, and M2 staff functions within the component commands, the ISR Division within the air component, the NATO Intelligence Fusion Center, and national exploitation cells provided by NATO nations.

It should be stressed that the SEWOC and JASIC are not tactical C2 agencies, but rather they provide operational-level direction. They will conduct neither air traffic control nor terminal guidance. What they will do is provide coordination and guidance to and between the component functional entities to enable rapid cross-cue and retasking as needed to respond to dynamic targets.

In this scheme, the JASIC must have connectivity and the ability to coordinate not just with the component ISR cells, but also with NATO and national exploitation cells. While most exploitation elements provided for NATO operations will be under the operational control of the NATO commander, some

MQ-1 Predator prepares to land (U.S. Army/Thomas Duval)

nations may be reluctant to share their high-fidelity intelligence exploitation capabilities or data feeds with other nations. But in the end the commander will care about conclusions drawn from the data rather than the data itself. Therefore, the JASIC must have the ability to receive finished intelligence products from national exploitation elements and fuse the products with other ISR data.

The Role of the JOC

The JOC will be the equivalent organization to the SEWOC and JASIC for all operational assets not tasked to ISR, EW, or some other special function. Again, NATO doctrine does not provide much in the way of specific guidance as to the roles and functions of the JOC. But based on the roles of functions of the JASIC and SEWOC, and regarding JISR and EW, we can identify the following:

- maintain a high level of situational awareness (SA) on the execution of joint operations including the location and intent on all blue, red, green, and white players
- ensure a high level of SA for all players executing joint tasks (vs. players executing component-specific tasks)
- ensure smooth transition of tactical C2 responsibilities between joint players either as part of planned execution or when needed as a result of unforeseen events
- oversee the identification and satisfaction of Commander's Critical Information Requirements
- provide a means to respond to incidents by hosting a Crises Action Team usually composed of J2/3/5, legal advisor, political advisor, and public affairs representatives, with others as needed
- maintain the JCOP and act as the final authority on all elements contained in it.

To do this, the JOC will need to coordinate with the ISR elements of all component headquarters and feed/interact with JCOP during execution. It will also need to work continuously with all the planning elements of the JTF HQ including the component liaisons.

Collection Management vs. Execution

While it is not the aim of this article to go into detail on the formulation of collected ISR data into actionable intelligence, it must be remembered

that any collection plan is a means to an end—satisfying the commander's information requirements to enable actions and achieve the desired effects. The real-time identification of targets and subsequent action against those targets as part of a planned campaign must therefore not be confused with the process of producing a collection plan to gather that data. In fact, the collection phase is but one of the four basic pillars of the production of military intelligence. Together, these pillars form a continuous process to provide the commander with the information to wage an effective campaign.

The above process is as old as ISR itself, and the NATO process of airborne ISR collection, for example, is mature and refined. But as we have learned in Afghanistan and Operation *Unified Protector*, a process that depends on a processing phase that sometimes lasts several days does not give the Alliance the flexibility to prosecute dynamic targets or to even identify targets and make decisions in what may only be a few minutes between collection against a moving target and its disappearance. According to Lieutenant General Jodice:

We were able to use the NATO system, but it took us a couple of months to refine it and get it into a nice, smooth process. And again that goes back to our intelligence preparation of the operational environment. The dynamic process was one that we really had to tailor for our operation, and I guess you could say that it started from the U.S. process. But then we had to make sure that it was tailored specifically for our operation. [11]

So while the intelligence cycle during a NATO operation must continue unabated, the Alliance must also have the real-time agility to get ISR data—immediately on collection—into the hands of analysts who can rapidly fuse that data with others, make quick assessments on the identification and intentions of opposing forces, and feed those assessments to decisionmakers for rapid action. While a JTF J2 staff must be organized, trained, and equipped to carry out the traditional cycle, the JTF must also be set up for, connected to, and well-versed in the process of real-time coordination inside the execution phase. The JISR process should allow the commander to take rapid action against targets that may already be on an order of battle but whose location may only be known for a very brief time.

Real-time JISR—Putting It All Together

To place all this into a practical context, reconsider the opening vignette. Using a traditional SIGINT/EW asset like the Norwegian DA-20 is a longstanding capability. But with JISR, we can send that data immediately to the JASIC and SEWOC, where they can collaborate to make an assessment. In this case, they identify the SA-6 but immediately realize that additional ISR data is needed for PID and CDE.

With their connectivity to the Land Component HQ ISR cell, they are able to redirect the Raven that has already been tasked for that day's ISR collection plan. Since the Raven in this case is organic to the land component, they would likely not have a dedicated exploitation cell. But through JISR, the Raven images and data flow immediately to the JASIC for fusion with the DA-20 SIGINT enabling a rapid, fused assessment. That assessment goes straight to the JOC where the J3 and commander can make an engagement decision—by which time the JASIC or the national exploitation cell supporting the strike aircraft will have derived high fidelity coordinates to enable the use of GPS-guided weapons.

And since the ISR coordinators within the JASIC as well as the JOC are already in contact with the component HQs and their tactical C2 elements (as well as pushing target data into the JCOP), the target data and clearance to strike can be sent to the strike aircraft within minutes, allowing an engagement that destroys the target before it is able to relocate.

In the final analysis, NATO nations need a core capability to locate, identify, and prosecute highly dynamic and often asymmetric targets. They must be able to field this capability in spite of what may be a reduced U.S. contribution to NATO operations in the future. JISR will give us this capability, but it must be built on a foundation of interoperability, technical interconnectedness, the ability to exercise joint C2 of allied ISR assets, and—most important—ISR operators who are organized, trained, and equipped with the right TTPs to get the job done. Here's hoping the UV14 does just that. **JFQ**

Notes

[1] Letter from the Multi-sensor Aerospace-ground Joint ISR Integration Interoperability Coalition to NATO Secretary General Anders Fogh Rasmussen, April 16, 2012.

[2] James P. Thomas, *The Military Challenges of Transatlantic Coalitions*, Adelphi Paper 333 (London: Oxford University Press for The International Institute for Strategic Studies, 2000), 52.

[3] Lieutenant General Ralph J. Jodice II, USAF, interview by author, May 29, 2013.

[4] NATO Media Backgrounder on Multinational Projects, available at <www.nato.int>.

[5] "Improving NATO's Capabilities," August 24, 2010, available at <www.nato.int/cps/ar/SID-92DDB208-23582FA7/natolive/topics_49137.htm>.

[6] "NATO's Joint ISR Concept," June 29, 2012, available at <www.natochannel.tv>.

[7] Colonel Tanguy Lestienne, "Preparing the Alliance for Tomorrow's Challenges: Trial Unified Vision 2012," *NATO ACT Transformer* (NATO ACT, Fall 2012).

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[9] "New NATO intelligence technology on trial in Greece," November 5, 2006, available at <www.nato.int/docu/update/2006/11-november/e1102c.htm>.

[10] Jorris Jannsen Lok, "NATO Tests Networked ESM Concept at Elite 2008," *Aviation Week Blog*, July 17, 2008, available at <www.aviationweek.com/Blogs.aspx?plckBlogId=Blog:27ec4a53-dcc8-42d0-bd3a-01329aef79a7>.

[11] Jodice, interview.

Staff Sergeant Salvatore Giunta, USA, first living recipient of Congressional Medal of Honor since Vietnam War, rescued two members of his squad during insurgent ambush in Afghanistan's Korengal Valley, October 2007 (U.S. Army/Leroy Council)

"Gallantry and Intrepidity"

Valor Decorations in Current and Past Conflicts

By Eileen Chollet

The Battle of Chosin Reservoir lasted 17 bitterly cold days in late November and early December 1950. Thirty thousand United Nations (UN) troops were surrounded by 120,000 Chinese troops, and they fought as a Siberian cold front brought the temperature down to –30°F. Back in the United States, the country had been enjoying the peace dividend following the end of World War II, and Soldiers and Marines were sent to Korea with equipment that was not designed for the environment. By the time the UN forces broke the encirclement and fought their way to evacuation at Hungnam, 3,000 U.S. Servicemembers had been killed, another 6,000 had been wounded, and 12,000 had suffered frostbite injuries. Fourteen Marines, two Soldiers, and a Navy pilot were awarded the Medal of Honor for heroic actions during the Battle of Chosin Reservoir.

The scorching deserts of Iraq and Afghanistan are a long way from frozen Chosin, and 60 years have elapsed since the Korean War. The nature of warfare has changed, from a brutal force-on-force engagement to a high-tech counterinsurgency operation. During 11 years of war, nearly 2.5 million U.S. troops have served in Iraq and Afghanistan, more than 5,000 have been killed, and nearly 50,000 have been wounded due to hostile action. However, only 13 Medals of Honor have been awarded for actions in those

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U.S. Marines patrol during cordon and search mission in Habib Abad, Helmand Province (DOD/Anthony L. Ortiz)

11 years, compared with 17 awarded for those 17 days in Korea. Servicemembers and civilians alike wonder why.

Valor Decorations Then and Now

Official criteria for the three highest U.S. decorations for valor—the Medal of Honor, Service crosses, and Silver Star—were established shortly after World War II, so reliable comparisons can be made for these awards through the Korean War, the Vietnam War, and in Iraq and Afghanistan. The Medal of Honor is presented to Servicemembers for gallantry and intrepidity in risking their lives above and beyond the call of duty. A Service cross (the Navy Cross, Distinguished Service Cross, or Air Force Cross) is presented for heroism not rising to the level of the Medal of Honor. The Silver Star is presented for heroism not rising to the level of a Service cross.

Although records on military decorations are public information (subject to the Freedom of Information Act), no complete database exists, with the Pentagon citing privacy concerns and incompleteness of records following a 1973 fire in an Army records building in St. Louis.[1] Following the recent Supreme Court overturning of the Stolen Valor Act, which upholds the right to lie about receiving a valor decoration, the Department of Defense (DOD) has begun to compile a database, initially intended to include only Medal of Honor winners going back to September 11, 2001, and recently expanded to include Service crosses and Silver Star. A complete database of Medal of Honor winners is maintained by the Congressional Medal of Honor Society, but the only mostly complete database of Service crosses and Silver Star awards is the *Military Times* Hall of Valor, which is maintained by military historian Doug Sterner.

Although the incompleteness of the data complicates the analysis, a comparison of award rates for current and past conflicts shows that 20 times fewer valor decorations have been awarded during the Iraq and Afghanistan wars than during Vietnam and Korea (see table 1). The Medal of Honor is the most talked about example.

Explaining the Decrease

Lawmakers, journalists, and military historians have speculated on what might be causing the 20-fold decrease in award rates. In a 2009 *Army Times* article, former Marine Joseph Kinney argued that being killed in combat had become a de facto criterion for winning a valor decoration, charging that DOD has an "inordinate fear that somebody is going to get the Medal of Honor [and] be an embarrassment."[2] Of the 11 medals awarded for the current conflicts, only 4 went to living recipients, and the first was not presented until 2010. The cases of Captain Charles Liteky, USA (a Vietnam-era chaplain who later renounced his medal in protest of U.S. policies in Central America), and Major General Smedley Butler, USMC (who later wrote a book denouncing war as a government "racket" to protect the interests of cor-

porations), argue for caution in presenting the high-profile Medal of Honor to living recipients. However, the award rates for the Service crosses and Silver Star have dropped by the same factor of 20, suggesting that something common to all three decorations—that is, something beyond the widespread publicity unique to the Medal of Honor—is causing the decrease.

In a report accompanying the National Defense Authorization Act for fiscal year 2010, the House Committee on Armed Services requested that DOD study the Medal of Honor award process to determine whether commanders in the field had inadvertently raised the criteria for valor, leading to the low numbers of awards. DOD reported that it was confident that the process had not changed and cited two reasons for the decrease in award rates: the current use of "stand-off" technology (unmanned aerial vehicles, or "drones") by U.S. forces, and the use of improvised explosive devices (IEDs) by the enemy.[3] However, a closer look at the data shows that these changes in the nature of warfare are only part of the answer, accounting only for a factor of about 6 from the factor of 20.

Table 1. U.S. Valor Decorations Awarded by War(s)

	Korea	Vietnam	Iraq and Afghanistan
Medal of Honor	135 awarded	248 awarded	13 awarded
	1 per 13,000 Servicemembers in theater	1 per 14,000 Servicemembers in theater	1 per 200,000 Servicemembers in theater
Service Crosses	1,100 awarded	1,700 awarded	70 awarded
	1 per 2,000 Servicemembers in theater	1 per 2,000 Servicemembers in theater	1 per 37,000 Servicemembers in theater
Silver Star	88,000 awarded	35,000 awarded	1,000 awarded
	1 per 20 Servicemembers in theater	1 per 100 Servicemembers in theater	1 per 2,600 Servicemembers in theater

Note: The award rate in Iraq and Afghanistan has a 20-fold decrease from Korea and Vietnam for all valor decorations.

Table 2. U.S. Valor Decorations Awarded per Casualties by War(s)

	Korea	Vietnam	Iraq and Afghanistan
Medal of Honor	113 awarded	159 awarded	10 awarded
	1 per 1,200 casualties	1 per 1,300 casualties	1 per 5,000 casualties
Service Crosses	480 awarded	650 awarded	30 awarded
	1 per 300 casualties	1 per 300 casualties	1 per 2,000 casualties
Silver Star	7,000 awarded	5,700 awarded	300 awarded
	1 per 20 casualties	1 per 30 casualties	1 per 200 casualties

Note: The award rate in Iraq and Afghanistan for Servicemembers killed or wounded has a five-fold decrease from Korea and Vietnam for all valor decorations.

The DOD Answer: Drones and IEDs

In current conflicts, drones have played a prominent role in surveillance and targeted killing, replacing some Servicemembers who would otherwise be put in harm's way. Since risk of one's life is required for valor decorations, the use of drones does indeed partially explain fewer valor decorations, but not the entire factor of 20. Though the exact number of missed combat actions is difficult to estimate, casualties can be used as a proxy for combat actions since each casualty due to hostile action probably represents a chance for valorous action. Only 1 in 50 Servicemembers in the Iraq and Afghanistan theaters have been killed or wounded due to hostile action, compared with about 1 in 15 in the Korean and Vietnam wars. Since the casualty rate between the past and current conflicts has dropped by a factor of three, lack of opportunities for valor due to remote warfare probably accounts for a factor of 3 out of the factor-of-20 decrease in awards.

Among those who do experience combat and are wounded or killed as a result, the number of valor decorations is still lower than it was in the past (see table 2). Since personnel who do experience combat are receiving 5 times fewer decorations, the lack of personal combat actions cannot entirely explain the missing factor of 20.[4]

IEDs have been called the "signature weapon of the 9/11 era," accounting for two out of three casualties in Iraq and Afghanistan.[5] Given the unpredictable nature of these weapons, Servicemembers probably have fewer opportunities to demonstrate "gallantry and intrepidity . . . above and beyond the call of duty."[6] However, three factors argue against IEDs playing a large role in the drop of award rates.

First, explosives were extensively used in Korea and Vietnam, and they historically account for more casualties than small-arms fire. Even the Vietnam War, known for its close fighting in the jungle rather than distant shelling, had more casualties due to explosives such as artillery, land mines, and grenades than to small-arms fire according to the Office of the Secretary of Defense, Southeast Asia Combat Casualties Current File.[7] While it might be "hard to be a hero against an IED,"[8] as one military historian put it, it is just as hard to be a hero against artillery fire, which can have an effective range of more than 10 miles.

Second, all the Medals of Honor awarded for combat in Afghanistan were for incidents that occurred in 2005 or later, when IEDs were most heavily used. If IEDs were causing the drop in award rates, we would expect the awards to be clustered at the beginning of the war when IED use was minimal.

Finally, reading through citations makes it clear that involvement in a close combat firefight is not the only (or even

the most common) way to be decorated for valor. Numerous awards have been presented to Servicemembers who jump on grenades or other explosives to shield their comrades. Rescue of one's comrades from danger—even while not under direct hostile fire—fits the criteria for a valor decoration. For example, Sergeant First Class Rodney Yano, USA, was a helicopter crew chief during the Vietnam War, and he was marking enemy positions with white phosphorous grenades. One exploded prematurely, partially blinding him and covering his body with severe burns while igniting other ammunition in the helicopter. He began shoving the burning ammunition out of the helicopter to protect his comrades, suffering additional burns that eventually took his life. He was awarded the Medal of Honor.[9] By comparison, Sergeant First Class Alwyn C. Cashe, USA, was decorated posthumously only with a Silver Star following his heroic rescue effort in Iraq. After his vehicle hit an IED, fuel from the vehicle spewed everywhere and ignited. Sergeant Cashe repeatedly returned to the vehicle to pull his fellow Soldiers to safety—all while his own uniform was on fire.[10]

If casualties are again used as a proxy for combat actions, and one-third of casualties are due to hostile action that does not include IEDs, then IEDs can account for at most another factor of 3 in the factor-of-20 decrease in valor decorations. Since IEDs do not *completely* prevent valorous actions, these weapons probably cause a decrease by a factor of about two. Between the factor of three due to fewer combat actions and the factor of two from IEDs, the official DOD explanations do explain a factor-of-6 decrease in awards, but not the observed factor-of-20 decrease. Something else must be contributing.

Times Are Changing

While the official criteria for the three highest valor decorations have not changed, the broader military culture has, and these changes may be causing the rest of the observed decrease in award rates. Following Vietnam, several decorations received authorization to include the Valor Devices for combat service, and commanders may now nominate Servicemembers for these awards instead of decorations specifically for valor. During the 1990s, military officials debated internally whether medals were being awarded haphazardly and too freely, ultimately resulting in a Pentagon review of Bronze Star awards presented for the intervention in Kosovo. Delegations of approval authority for the Iraq and Afghanistan operations admonish commanders to reserve awards for those "who truly distinguish themselves from among their comrades by exceptional performance in combat or in support of combat operations."[11] It would be unusual for these cultural factors not to affect the number of decorations awarded.

While the award process itself—from nomination to award (or not)—is understandably kept private, some indirect evidence suggests that something has changed in the award process since the Vietnam War. During the Vietnam era, the median time between a combat action and the presentation of a Medal of Honor was about 20 months. In Iraq and Afghanistan, that processing time has increased to 30 months. In past conflicts, 35 to 40 percent of valor decorations went to officers; in the current conflicts, that percentage has decreased to 25. Meanwhile, the percentage of decorations going to senior enlisted personnel (E7 to E9) more than doubled, from 3 percent to 8 percent. These data do not point to any specific cause, but we could speculate that the changing roles of Servicemembers in theater or the transition from a draft force in Vietnam to an all-volunteer force today may be playing significant roles.

The missing pieces of the data, along with the complex and changing nature of warfare and military culture, make the exact causes of the 20-fold decrease in the number of valor decorations in current operations difficult to determine. The prevailing explanation that the nature of warfare has changed is incomplete, explaining at most a factor of 6 out of 20. While the new DOD database makes a good attempt at transparency, it needs to be expanded to include all valor decorations and conflicts. The natures of combat and military culture have changed since the 1970s, and the effects on the award process deserve more careful study to ensure that our Soldiers, Sailors, Marines, and Airmen are awarded the decorations they earn. **JFQ**

Notes

[1] Office of the Under Secretary of Defense for Personnel and Readiness, *Report to the Senate and House Armed Services Committees on a Searchable Military Valor Decorations Database*, March 2009, available at <http://blogs.militarytimes.com/hall-of-valor/files/2012/06/DB-Report.pdf>.

[2] Brendan McGarry, "Death before this honor: Why have Iraq and Afghanistan produced only 5 Medal of Honor recipients, none living?" *Army Times*, March 26, 2009, available at <www.armytimes.com/news/2009/03/military_medal_of_honor_032509w/>.

[3] Office of the Under Secretary of Defense for Personnel and Readiness, *Report to the Senate and House Armed Services Committees on the Medal of Honor Award Process*, January 2011.

[4] The numbers here are somewhat uncertain. The decrease is somewhere between threefold and eight-fold.

[5] Spencer Acerkman, "$265 Bomb, $300 Billion War: The Economics of the 9/11 Era's Signature Weapon," *Wired*, September 8, 2011, available at <www.wired.com/dangerroom/2011/09/ied-cost/>.

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[7] "Statistical Information about Fatal Casualties of the Vietnam War," available at <www.archives.gov/research/military/vietnam-war/casualty-statistics.html#cause>.

[8] McGarry.

[9] *Military Times* Hall of Valor, Medal of Honor citation for Sergeant First Class Rodney James Tadashi Yano, available at <http://militarytimes.com/citations-medals-awards/recipient.php?recipientid=2796>.

[10] *Military Times* Hall of Valor, Silver Star citation for Sergeant First Class Alwyn C. Cashe, available at <http://militarytimes.com/citations-medals-awards/recipient.php?recipientid=29028>.

[11] Jim Tice, "If it's easy medals you're after, you've come to the wrong war," *Army Times*, September 1, 2003.

Army Secretary John McHugh (speaking) and Army Chief of Staff General Raymond T. Odierno testify before House Armed Services Committee (U.S. Army/Teddy Wade)

Cut Defense Pork, Revive Presidential Impoundment

By Lawrence Spinetta

We have gone from a sense of urgency to restrict an imperial President to a sense that the President needs to restrict, if not an imperial Congress, at least a spendthrift one.

—Senator William Cohen
Line Item Veto Debate, 1995

Every year, Congress packs the defense budget with expensive, unnecessary, and unwanted weapons. This year's National Defense Authorization Act is no exception. Not only does it spend $2 billion more than the military requested, but it also diverts $74 billion in proposed savings to, in the words of former Secretary of Defense Leon Panetta, "other areas that, frankly, we don't need."[1]

As a case in point, Congress mandated the purchase of 280 M1A2 Abrams tanks despite Army Chief of Staff General Raymond Odierno repeatedly telling the House Appropriations Subcommittee on Defense: "these are additional tanks that we don't need."[2] The Army wants to continue shedding its Cold War–era heavy armor and will likely send the 280 additional tanks to join 2,000 others sitting idle at depots in the California desert.[3] The Army made the same argument to Congress last year but was similarly rebuffed.

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Defense as a Jobs Program

Lawmakers habitually spend more on defense than the Pentagon requests because they treat the defense budget as a jobs program. In the case of the M1 tank, Congress was unwilling to close the production line because it provides 16,000 jobs at 882 suppliers spread widely among congressional districts. In short, parochial interests triumphed over national security requirements.

The Services share some of the blame. They recognize that many in Congress prioritize jobs within their districts, which is why most major weapons systems have parts built in nearly every state. For example, the F-35 Joint Strike Fighter, a new fighter jet designed for the Air Force and Navy, has 1,300 suppliers in 47 states and Puerto Rico. While this legislative strategy helps gain approval for new weapon systems, it is a Faustian bargain because it entrenches the political power of the defense industry and saddles the Services with inventories of strategically obsolete weapons that Congress loathes to cut.

Money used to maintain these expensive, unnecessary, and unwanted weapons could be better spent elsewhere. In March 2012, Lieutenant General Robert Lennox, the deputy chief of staff for Army programs (G8), emphasized that the Army does not have the budget to support legacy systems to prop up the defense industry. He used a historical analogy to deride Congress's decision to buy more M1 tanks notwithstanding a lack of need: "We don't want to be in the position of 1939 when we say we have to go out and protect the saber and saddle industry because our cavalry is going to need it for the future. We have to make sure we got the right industrial challenges for the future and those are the ones we have to focus on."[4]

Not only does innovation suffer, but readiness suffers as well. "There is pressure on the department to retain excess force structure and infrastructure instead of investing in the training and equipment that makes our force agile and flexible and ready," observed Secretary Panetta in December 2012 remarks at the National Press Club. "Aircraft, ships, tanks, bases, even those that have outlived their usefulness have a natural political constituency. Readiness does not."[5]

Past statements by then-Senator Chuck Hagel suggest the new Secretary will be keen to prevent Congress from throwing money at wasteful defense projects. In June 2011, he lectured fellow lawmakers: "You guys have it upside down. Our Defense Department budget . . . is not a jobs program. It's not an economic development program for my state or any district."[6] One way Secretary Hagel can counter Congress's penchant for pork is to advocate for the revival of Presidential impoundment, an executive branch tool used to enforce fiscal prudence. Impoundment occurs when the President delays or refuses to spend money appropriated by Congress.

Thomas Jefferson set precedent for impoundment in 1803 when he suspended the purchase of 15 gunboats.[7] In his Third Annual Message to Congress, President Jefferson stated, "The favorable and peaceable turn of affairs on the Mississippi rendered an immediate execution of that law unnecessary." Furthermore, he explained, "Time was desirable in order that the institution of that branch of our force might begin on models the most approved by experience."[8] In short, Jefferson exercised his discretion as Commander in Chief and chief executive. He impounded congressionally appropriated funds based on his assessment of the strategic situation and his desire to purchase new and better models at a later date.

The U.S. Constitution established a system of checks and balances that entrusts the "power of the purse" to Congress under Article I. However, Article II assigns the executive branch the authority to expend appropriated funds. A 1995 Senate budget committee report noted, "This tug-of-war goes to the most basic tenet of the American democratic system of government—the balance of powers between the executive and the legislative branches of government—the power of the purse versus the impoundment power."[9]

For 170 years after Jefferson claimed the power of impoundment, Presidents at various times and for various reasons exercised that authority. They mostly used it for narrow defense-related purposes, trimming expenditures for weapons they deemed unnecessary.[10] For example, Harry Truman refused to spend $735 million to increase the Air Force from 48 to 58 groups. Dwight Eisenhower set aside $137 million for the Nike-Zeus missile system. And John Kennedy, on the advice of Secretary of Defense Robert McNamara, withheld $180 million to end the XB-70 Valkyrie bomber program.[11]

Congress Fights Back

Congress sometimes acquiesced to Presidents' actions while at other times the parties negotiated a political settlement. However, the balance of power changed as a result of President Richard Nixon, who expanded the scope and magnitude of Presidential impoundments, holding back between 17 and 20 percent of controllable expenditures between 1969 and 1972. In 1973, under the guise of controlling inflation caused by high levels of government spending to support the Vietnam War, he suspended nearly $15 billion, almost 20 percent of controllable spending, which affected over a hundred Federal programs.[12] Congress fought back and passed the Congressional Budget and Impoundment Control Act (CBICA) of 1974, which had the objective of curtailing the President's budgetary powers. The act outlawed impoundment, requiring the executive branch to spend every last penny of congressional appropriations.

Nixon denied that Congress had the constitutional authority to impose such a restriction. However, weakened by the Watergate scandal, he elected not to fight it. Nixon resigned a month after the CBICA became law. The new Ford administration, not wanting to further antagonize a hostile Congress, chose to comply with the law rather than appeal to the Supreme Court.[13] That decision, according to Senator John McCain, contributed to "exploding" deficits. "It is not coincidence that up until 1974 revenues and expenditures . . . were in sync," opined McCain during a 1995 Senate

M1 Abrams battle tanks (DAC/Don Teft)

debate. "There are times . . . in war when we ran up huge deficits. But after those emergencies subsided, we again brought the budget into balance. It was in 1974 when the two began to diverge to an incredible degree."[14]

The CBICA fundamentally shifted the budgetary balance of power between Congress and the President. The law allowed the President to request rescissions, but that was only permitted if both houses of Congress consented. Not surprisingly, subsequent to the enactment of CBICA, Congress has simply ignored Presidential rescission requests, killing them through inaction.

The CBICA granted more leeway with deferrals. The President was authorized to defer spending unless either the House or Senate passed legislation disapproving the request. (Note that appropriated funds still had to be spent before the end of the fiscal year.) In 1986 the Supreme Court reviewed the CBICA deferral provision and ruled one-house vetoes of Presidential actions unconstitutional.[15] Acting quickly to regain the upper hand, Congress enacted the Balanced Budget and Emergency Deficit Control Reaffirmation Act of 1987 (otherwise known as Gramm-Rudman-Hollings II). The bill took away most of the President's deferral power, although it did provide for limited exceptions.

In 1988 the Air Force probed congressional appetite for enforcement of the law when it refused to spend $160,000 authorized by Congress to keep seven SR-71 Blackbird spy planes in flyable storage. The Service insisted the aging Cold War aircraft were too expensive to operate and were no longer needed because of the capabilities of spy satellites. The move went unchallenged, perhaps because the sum at stake was relatively inconsequential. Five years later, Congress ordered the Blackbird out of retirement. The Air Force, which had not budgeted for the aircraft, moved to ground the plane for a second time in 1996. The move coincided with a shift in the tug-of-war between Congress and the President back in favor of the executive. Congress enacted the Line Item Veto Act of 1996, which gave the President sweeping powers to veto individual items in appropriations bills unless Congress overrode the veto with a two-thirds vote in both houses.

The legislation was immediately challenged by multiple lawsuits. One appeal reached the Supreme Court in 1997, but justices withheld ruling on the constitutionality of the act, choosing instead to dismiss the challenge on technical grounds.[16] During the legal wrangling, President Bill Clinton used his new power 82 times, including taking action to rescind $39 million allocated for the SR-71.[17] Finally in June 1998, the Supreme Court took up a second appeal (*Clinton v. City of New York*) and struck down the law in a 6 to 3 decision.[18] In dissent, Justice Antonin Scalia wrote, "There is not a dime's worth of difference between

Congress authorizing the president to cancel a spending item, and Congress' authorizing money to be spent on a particular item at the president's discretion. And the latter has been done since the founding of the nation."[19]

The Supreme Court decision shifted the balance of power back in Congress's favor, something that is not conducive to curing, to quote then-Senator and later Secretary of Defense William Cohen, "the presence and prevalence of trichinosis in the halls of Congress."[20] Congress's refusal to cut public spending has led to sequestration, which mandates across-the-board defense spending cuts that no one believes make strategic sense.

While dysfunction and a failure of political will to cut spending do not justify unconstitutional remedies such as the Line Item Veto Act, returning to a pre-1974 equilibrium where the President routinely exercises his judgment to trim defense pork would be advantageous for the Nation.[21] "To be able to surgically remove wasteful spending would be a service to the taxpayers," remarked Cohen. "Every report about a $700 toilet seat . . . sends the message that Congress is either intoxicated with power or powerless to overcome its spending addiction."[22]

The President's Next Move

Accordingly, the President should initiate the next round in the tug-of-war between the powers of the purse versus that of impoundment. Specifically, he should seek to revive his impoundment authority for narrow, defense-related weapon procurement issues. "There [is] a fragile but real distinction between impoundment of appropriations for weapons systems and the impoundment of other funds," notes one constitutional scholar.[23] The President should first explore a legislative compromise with Congress to grant him that power. One solution may be for the President to lean on Congress to include the phrase "sum(s) not exceeding" in the defense bill rather than mandating specific funding levels for programs. That phrase has been used in a series of statutes to give the executive branch discretion over appropriated funds. Indeed, the Supreme Court in its *Clinton v. City of New York* decision suggested that practice was within the bounds of the U.S. Constitution.

Absent a legislative compromise, the President should pick an egregious example of defense pork, perhaps the 280 M1 tanks slated for storage, and reassert his historic right. While the Supreme Court was not amenable to allowing Congress to vote to give the President broad line-item veto power, it may be less willing to infringe upon the President's independent constitutional authorities as Commander in Chief and chief executive to block defense spending that is wasteful or strategically unsound.

Even if a limited Presidential authority emerges from this next round of tug-of-war, it would serve to lower the defense baseline every year. And as every saver knows, even small cuts over a long period can add up to considerable savings. More important, it may also instill behavioral changes that stave off bankruptcy and lead to a more stable financial future. JFQ

Notes

[1] Leon E. Panetta, remarks at the National Press Club, Washington, DC, December 18, 2012.

[2] Raymond T. Odierno, testimony before the U.S. House Appropriations Subcommittee on Defense, Washington, DC, March 7, 2012.

[3] "Congress buying tanks no one needs," *The Modesto Bee*, February 10, 2013, available at <www.modbee.com/2013/02/10/2572079/congressbuying-tanks-no-one-needs.html>. See also Drew Griffin and Kathleen Johnston, "Army to Congress: Thanks, But No Tanks," *CNN.com*, October 9, 2012, available at <http://security.blogs.cnn.com/2012/10/09/army-to-congress-thanks-but-no-tanks/>.

[4] Michael Hoffman, "Army to saber and saddle industry: Sorry," *DoDBuzz.com*, March 22, 2012, available at <www.dodbuzz.com/2012/03/22/army-to-saber-and-saddle-industry-sorry/>.

[5] Panetta.

[6] Chuck Hagel, interview by Jacob Weisberg, New York, June 14, 2011, available at <www.cfr.org/world/hbo-history-makers-chuck-hagel/p25305>.

[7] In February 1803, Congress appropriated $50,000 to buy the warships after learning France had acquired the Louisiana Territory from Spain and closed the port of New Orleans to American commerce. Two months later, France agreed to sell the Louisiana Territory to the United States, thereby negating the immediate need to acquire the gunboats, at least in Jefferson's opinion.

[8] Thomas Jefferson, Third Annual Message to the Senate and House of Representatives of the United States, Washington, DC, October 17, 1803.

[9] U.S. Senate, *Legislative Line Item Veto of 1995: Report of the Committee on the Budget*, Report 104-9, 104th Cong., 1st sess., February 27, 1995, 1.

[10] Notable exceptions of Presidents who impounded funds for other than defense-related purchases include Ulysses S. Grant and Franklin D. Roosevelt. In 1876 Grant declined to spend money appropriated for harbor and river improvement projects. Similarly, relying on emergency authorities during World War II, Roosevelt laid aside funds appropriated for public works not directly related to war efforts. See Arthur M. Schlesinger, *The Imperial Presidency* (New York: Mariner Books, 2004), 236.

[11] Ibid.

[12] Ibid., 238.

[13] See Paul M. Johnson, *A Glossary of Political Economy Terms*, available at <www.auburn.edu/~johnspm/gloss/impoundment>.

[14] John S. McCain, *Congressional Record—Senate* 141, no. 52 (March 21, 1995), S4212–S4222.

[15] *City of New Haven v. United States*, 809 F.2d 900 (D.C. Cir. 1987).

[16] *Byrd v. Raines*, 956 F.Supp. 25, 37–38 (D.D.C. 1997).

[17] Helen Dewar and Joan Biskupic, "Court Strikes Down Line-Item Veto," *The Washington Post*, June 6, 1998, A1.

[18] *Clinton v. City of New York*, 524 U.S. 417 (1998). The court's decision did not consider whether the act disrupts the balance of powers specified in the U.S. Constitution. Rather, its ruling "rests on the narrow ground that the Act's procedures are not authorized by the Constitution." Note: the Court's decision did not save the SR-71. The Air Force redistributed the funds and expunged the aircraft from its inventory in 1998.

[19] Ibid.

[20] William S. Cohen, *Congressional Record—Senate* 141 (March 22, 1995), S4301–S4312, available at <www.gpo.gov/fdsys/pkg/CREC-1995-03-22/pdf/CREC-1995-03-22-pt1-PgS4301.pdf>.

[21] Dewar and Biskupic, A1.

[22] Cohen.

[23] Clinton L. Rossiter, *The Supreme Court and the Commander in Chief* (New York: Cornell University Press, 1976), 163.

Biometric eye scanner identifies patients arriving at hospital at Bagram Airfield (U.S. Army/Chris Hargreaves)

Biometric-enabled Intelligence in Regional Command–East

By David Pendall and Cal Sieg

In Afghanistan, coalition and Afghan National Security Forces (ANSF) continue to leverage an important component of the counterinsurgency and counterterrorism fight: biometrics. Simply put, biometric-enabled intelligence (BEI) efforts are producing a high return on operations designed to collect and exploit information about insurgents. Consider a few key metrics. A majority of our operations produce biometric information that leads to arrests, warrants, and the removal of insurgent anonymity. Furthermore, increasing components of our successful insurgent-targeted operations are a result of our biometric collection and enrollment processes. Across Regional Command–East (RC-E), biometric intelligence-driven operations have achieved major impacts on the insurgent ability to maintain leadership and lower-level cell structures as both coalition and Afghan forces regularly employ biometrically developed insurgent watch lists and "be on the lookout" (BOLO) messages and as they execute deliberate detention operations.

The biometric enrollment program in Afghanistan began in earnest in 2006. Since then, hundreds of thousands of biometric records have been ingested in both coalition and Afghan databases. In total, we have developed an extensive repository of biometric data across Afghanistan.

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Additionally, these same modes of biometric data allow both coalition and Afghan forces to protect themselves by ensuring that the ANSF, local national workforce, Afghan Local Police, and reintegrating insurgents (and criminals) are who they say they are and can be screened against derogatory information (matches for previous incidents such as improvised explosive device [IED] attacks and other events that leave biometric information behind). The biometrics program is an invaluable part of the campaign that has even greater potential in the future.

Applying BEI

Enrollment is merely the first step in the application of this tool for counterinsurgency and counterterrorism. Enrollment comes from volunteerism in local villages, often supported by the village elders and leaders, as well as involuntary enrollment of detained individuals believed to be witnesses or having direct involvement with security incidents. Both coalition and Afghan forces are involved in the enrollment phase since operations in Afghanistan are inherently partnered—that is, combined operations are the standard.

Following enrollment and upload of the biometric data to the data repositories, the anonymity previously counted on by the insurgent is removed. This step is crucial as it leads to the ability to identify individuals with previous events that have associated biometric-based facts. The extraction of the biometric data begins with an event, and additional biometric information is gained through forensic means to recover trace elements and fully admissible biometric information for both prosecution and intelligence exploitation. The Afghan rule of law sector—the Ministry of Justice, courts, judges, and prosecutors at the national level—understands the significance of biometric evidence and supports its use for making the case against insurgents. The intelligence and operations communities—Afghan and coalition—use the exploitation to trace individuals back to events. This gives the combined team a great advantage over the enemy that it must use.

For those elements that are identified and are transient, BEI offers even greater advantages. The combined team regularly uses checkpoints and other random screenings along traffic routes, fixed facilities, and areas where locals regularly concentrate such as bazaars and markets. Coupled with an active BOLO program and electronic checks against watch lists, the "out of towners" are either identified, enrolled and matched, or correlated with previous enrollments in other areas, which highlights them as mobile actors. Each of these actions flags the individuals and allows security forces to know more about them and to take appropriate steps such as questioning, enhanced search, or detention.

For specific, deliberate actions such as directed detention operations, the execution of police force high-risk warrants, and targeted raids against identified insurgents, the combined team has leveraged biometrics to confirm identities on the objective, confirm linkage of the detained individuals to previously committed insurgent or terrorist acts, and collect additional biometric evidence.

Why We Do It: The Payoff

The overarching purpose of using BEI- and biometrics-based toolsets is to deny anonymity and increase the effectiveness of security and police operations. This premise also begs additional questions: Is it sustainable for future Afghan security forces? Does the Afghan rule of law process fully condone and embrace the use of biometrics? Are the biometrics processes subject to countermeasures by insurgents? Are insurgents dissuaded by biometrics capabilities? As we address these valid questions, keep in mind the broader element in play: we are likely only in the early stages of biometrics as a 21st-century capability for nation-state security.

Just as U.S. security and justice systems in the 20th century benefited from the use of fingerprint enrollments, "mug shots," and DNA, scientific and technological breakthroughs coupled with readily accessible national data bases are likely to benefit us in the 21st century. The full potential remains unknown. We regularly read about "cold cases" being solved, death row inmates being cleared or convicted based on new DNA evidentiary technologies, and new biometric forensic extraction techniques that tie violent acts to previously unknown terrorists. Having consistent biometric ingestions and data compilation from individual enrollments and from attack or crime scenes will set conditions to better enable security and law enforcement elements in the future both in Afghanistan and as part of our own homeland security initiatives. Since the world is increasingly linked, and a day's travel can move both individuals and material to nearly any spot on the surface of the Earth, it is an investment in security we should not allow to go unresourced.

In terms of Afghan sustainability, both the government and security forces are demonstrating signs of readiness to pursue biometrics in their own rights. We do not delve into the question of funding here, but we do highlight the fact that the rule of law sector acknowledges biometrics as a legal tool and accepts biometric forensic data in national courts. Afghan security forces are increasingly trained in evidence collection, handling, and retrieval. The government maintains its own biometric database, its own access to enrollment technology, and a growing forensically trained workforce. Additionally, the government is expanding a warrant-based targeting program, issues warrants based on biometrically derived evidence, and has a growing information technology infrastructure to allow better access to biometric and other identity-based information for select fielded forces and operating units. Coalition and other international efforts continue to enable the ANSF and the security- and justice-related ministries to pursue these capabilities. The issue ultimately is one of confidence and established practice with sustainable processes, not lack of interest or basic capability.

The Afghan rule of law sector has supported biometrics as addressed above, and increasingly the courts look for biometrics as a component of the prosecution's case. Whether it is fingerprints, DNA, or photos of insurgents at the crime scene with

seized illegal material, we can confidently state that biometrics are fully embraced by the Afghan legal system at the national level, as evidenced by the actions of the National Security Court at the Justice Center in Parwan (JCIP). The regularly issued criminal warrants from the Ministry of Justice further empower the combined team and ANSF to conduct direct actions and detentions of individuals wanted by the courts. As an enabler to this, the RC-E team provides a mechanism for distribution of warrants and BOLOs in English, Dari, and Pashtu, with the individual's photo and explanation of the offense. Even matched identities without warrant can be distributed as BOLO information to security forces and placed on leaflets and other media.

Table 1. BOLO/Warrants for Regional Command—East, as of January 29, 2012

Task Force	BOLOs Issued	Warrants Requested	Warrants Issued	Detentions
Blackhawk	21	7	8	6
Bronco	28	12	14	4
Bulldog	16	9	7	1
Lafayette	2	0	2	0
Maverick	3	0	3	0
Spartan	70	39	20	20
Thunderbird	6	3	2	1
White Eagle	4	3	1	0

Table 2. BOLO/Warrants in Afghanistan, as of January 29, 2012

Task Force	BOLOs Issued	Warrants Requested	Warrants Issued	Detentions
RC-E	150	73	84	32
RC-N	18	13	3	2
RC-C	1	0	1	0
RC-S	112	80	23	10
RC-SW	175	139	19	8
RC-W	3	0	2	1

BOLO/Warrants (Rule of Law)

In RC-E, the BOLO produced by Combined Joint Task Force (CJTF) Paladin is the foundation upon which the rule of law apprehension program is being developed. These IED-related BOLOs are simply a storyboard detailing an IED event (whether detonation occurred or not) with the results of the exploitation of the site or device and the subsequent identification made by biometric means. This connection between the identified person and the device is sufficiently documented (to include a photo of the subject) and causes issuance of the BOLO. This same information is also submitted to the Anti-Terror Prosecution Directorate (ATPD), which utilizes the information to issue a National Security Warrant (NSW).

To achieve more acceptance of BOLOs by Afghans, the format was changed from a rather bland appearance to a more colorful look. These new BOLOs were issued in 2011. Their nickname of "Jingle BOLO" comes from the colorful trucks seen throughout Afghanistan (called "jingle trucks"). The Jingle BOLOs were designed to be more culturally appealing. We observed a noticeable increase in Afghan acceptance and use of these BOLOs over the following year.

The CJTF Paladin BOLOs occur as the result of post-blast analysis (PBA) conducted by the various explosive ordinance detachments supporting the overall mission. This PBA yields items of evidentiary value in varying forms. The Afghanistan Captured Material Exploitation Laboratory (formerly the Combined Explosives Exploitation Cell and Joint Expeditionary Forensics Facility labs) receives the items and conducts extensive scientific analysis and testing, often producing biometrically identifiable samples that will support positive matches for identification purposes. These matches can be used to initiate a warrant for identified individuals involved with the security incident. Often, these warrants are also used to create the Afghan BOLO report that is disseminated to the ANSF.

While the BOLO is not an official Afghan document, it does contain what some would term "sufficient cause" ("probable cause" in our system) for a judicial order. In this case, the ATPD reviews the "evidence" relating to the IED event (with subsequent positive identification), and, once satisfied, the ATPD issues an NSW. This warrant is significant in that as an official Afghan government "order," it should be followed and its execution should not only be expected but compelled. Unlike the BOLO, the NSW must be given due deference, and it is the responsibility of the Afghan law enforcement community to aggressively pursue the subject of the warrant.

Currently, there are roughly 150 CJTF Paladin IED BOLOs issued in RC-E (see tables 1 and 2) with 459 throughout Afghanistan, and 73 CJTF Paladin IED NSWs issued in RC-E with 305 throughout the country. While the majority of apprehensions based on these BOLOs and NSWs are essentially the result of "military" (either coalition forces or ANSF) missions, there have been apprehensions based purely on Afghan law enforcement actions. As rule of law becomes more widespread, law enforcement will become more involved in the apprehensions of these BOLO and NSW subjects.

To assist the ANSF, the RC-E has instituted a program to make these BOLOs and warrants available to the ANSF electronically by uploading them to a public Web site that has been established as a leave behind system for use by the Afghan government and people. This site, called *Ronna* (Pashto for "guiding light"), is a relatively new concept, and its use can be termed "in its infancy" at best. Properly utilized, Ronna can provide a simple tool for Afghan law enforcement to utilize in managing a basic wanted persons program.

Ronna in Support of the BOLO/Warrant Program

In July 2011, Ronna was targeted as a potential repository for the CJTF Paladin BOLOs and resulting warrants issued by the ATPD. In a sense, the American National Crime Information Center system would be replicated in that these BOLOs and warrants would be available electronically and would cover all of Afghanistan.

The first phase of the process was to upload all CJTF Paladin BOLOs and IED-based NSWs. This project began in September 2011, and, as mentioned, over 450 BOLOs and 305 warrants have been uploaded. The second phase of the process (currently under way) is to ensure the widest possible dissemination of the capabilities of Ronna as it relates to support of the law enforcement mission. To achieve this end, law enforcement professionals have been informing their contacts during key leader engagements of the existence of Ronna, that it can be viewed in either Pashtu or Dari, and that wanted person information is contained therein regarding those individuals linked to IED events by biometric evidence. It is envisioned that the Operations Coordinating Centers Regional and Provincial, a combined coalition force–Afghan force site existing in almost all provinces throughout the country, will be the springboard for implementing electronic searches for BOLOs and warrants by ANSF.

To be sure, success is not guaranteed. There are yet issues to overcome such as high illiteracy rates among ANSF, lack of computers and connectivity, infiltration of ANSF by insurgents, and government interference from either outright corruption or simple bureaucratic meddling/control. If, however, even marginal success is achieved, the message to Afghan law enforcement would be that this electronic medium could provide great assistance and support in the mission of service to the people.

Biometrics and the Afghan Judicial System

Experience and lessons learned from Iraq have shown that the judiciary will accept biometric evidence if it has been *educated* in the process of biometrics including not only the scientific basis for reliability but also the actual collection, preservation, and security (chain of custody) of such evidence.

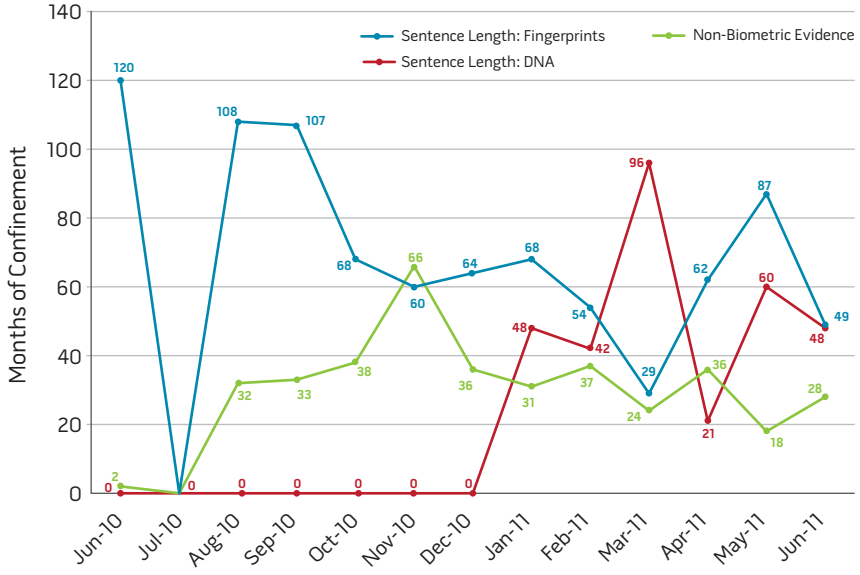
In Afghanistan, the model for successful use of biometric evidence in criminal prosecutions is the Afghan National Security Court located at the Justice Center in Parwan. The trials conducted at the JCIP are entirely Afghan administered and controlled, using Afghan laws, judges, prosecutors, defense lawyers, and investigators. Justice advisors from the U.S. Defense and State Departments mentor, train, and advise these prosecutors, defense counselors, and judges at both the primary court and appellate court levels.

The use of biometrics in prosecutions at JCIP now plays a prominent role in the convictions of those individuals who have been so matched to criminal offenses. The majority of these criminal cases involve biometric matches to instrumentalities of criminal acts. This use of modern science by the Afghan National Security Court has resulted in convictions in almost every case where a biometric match has been made between the defendant and the criminal instrument (compared to a roughly 80 percent conviction rate in all prosecutions). The success story does not end with convictions alone. In cases involving DNA evidence, sentencing is consistently longer than those without DNA use (see figure).

While the success of biometric evidence use in court has become the norm at the JCIP, this is not the case in the primary courts at the provincial level. Although the government has established its own forensics laboratories, there has yet to be infusion of lab results into the mainstream judicial system. Afghans still require a concerted training and indoctrination program for those judges below the national level in the acceptance and use of biometric-based evidence. Work continues to develop the evolution of forensics use and availability for the primary courts (judges, investigators, prosecutors, and defense attorneys) at the provincial level and below and in the use and acceptance of biometrics as credible evidence.

So does widespread biometric use dissuade the insurgent from participating in crimes or terrorist events? We believe so. This is not true for every insurgent, and we are not painting this capability as a panacea for counterinsurgent strategy. The facts are that insurgents understand that the ANSF and coalition can remove

Average Length of Confinement Per Month
DNA v. Fingerprints v. No Biometrics



their anonymity permanently. They know that when they are enrolled they are no longer unknown. Those reintegrated know they are forever registered, and a return to the insurgency will not be without great risk for recapture or increased sentence when they are prosecuted. The resultant pressure from knowing these facts does change behavior, which could and should be exploited. In a growing number of operating areas, the use of billboards, leaflets, and television and radio broadcasts routinely make "most wanted" lists of insurgents public, with tip line and contact information for citizens to provide information. Village elders and community leaders are aware of the programs and understand the practical use of biometrics against insurgents.

Marine gathers identification information from Afghan during census patrol in Helmand Province (U.S. Marine Corps/Dexter S. Saulisbury)

Three Success Stories

"Hey, I've Seen You Before!" As Gul and Mohammad, members of an Afghan local police force, sat at their checkpoint surveying the countryside, they noticed people walking slowly down the road toward them. As the small group reached the checkpoint, Gul and Mohammad, who like many of their comrades were unable to read, matched the faces before them with the BOLO photos hanging on the wall. Gul, closely examining the five faces, asked a male in his late 20s to step forward. As he did, Gul pulled down a BOLO from the wanted board behind him and studied both the face in the poster and face in front of him. With a broad smile, Gul told the man "You are mine" and took him into custody. The face on the BOLO was an individual identified as being involved in multiple IED events. He had years earlier been biometrically enrolled by a U.S. Army patrol that encountered him during an enrollment mission.

It did not matter that the Afghan police officers who identified and apprehended him could not read or write. What did matter was that by using the earliest form of biometric identification, facial recognition, the officers removed a dangerous bomb maker from the battlefield, making the area safer for not only coalition and Afghan security forces, but also innocent Afghan citizens who have been victimized by war for decades.

The Lone Bomber. Two police officers watching from their vehicle saw an approaching motorcycle and knew immediately that something was wrong. The motorcycle's speed and erratic movement dictated a stop and inquiry. The police asked for proof of identity but none was produced. After incomplete or evasive answers to routine questions, the police transported the motorcyclist to a nearby police station for further investigation. He had no identification documents and continued to be evasive regarding his identity, so he was subjected to an iris scan that identified and connected him to over a dozen bombing events. He was placed under arrest and a further check via computer under his true name revealed not only a BOLO, but a national security warrant on him as well.

The Bomber Gang. A group of insurgents had been operating in a rural agricultural province in eastern Afghanistan for some time, plying their deadly trade as bomb makers and emplacers. Their activity resulted in the killing and wounding of International Security Assistance Forces as well as ANSF. It was just a matter of time until they were identified with a particular IED and apprehended. All told, 39 separate attacks contributed to the identification matches and subsequent apprehensions. In some instances, the IED events from which the evidence derived occurred years before.

In early August 2011, the gang appeared before the JCIP. It was the first IED network case to appear before this court. Of the 11 suspects from the Mota Khan District of Paktika Province, all but one had been biometrically matched to the 39 separate events. The 10 biometrically matched suspects were convicted of violations of Articles 19 and 14 of the Afghan Penal Code with sentences of 14 years for four of the defendants, 9 years for another four, and 2 years for two. The Combined Explosives Exploitation Cell Lab (now the Afghanistan Captured Materials Exploitation Lab) provided 13 latent to known matches. DNA labs provided 29 DNA to known matches. CJTF Paladin's Theater Explosives Exploitation Cell provided six replicas of the primary devices that were recovered as evidence.

While these events might seem to be routine examples of good police work in the United States, Europe, or other developed nations, there was nothing routine about them occurring in remote parts of Afghanistan. The use of biometrics and supporting Internet connectivity is a major success story in the continuing transition to rule of law in the country.

Border police at Wesh review information flier about Afghan 1000 Biometrics Facility (U.S. Army/ Joseph Johnson)

The use of biometrics in identifying IED makers and emplacers has been an ongoing achievement, first in Iraq and now in Afghanistan.

As in all biometric matching programs, first and foremost, a well-populated reference (or comparison) database must be established. Obviously, the more references available (identified persons via biometric identifiers such as DNA sample, fingerprint sample, and/or iris scan), the greater the probability that there will be a match from biometric evidence taken from an IED or other event of a criminal nature.

Insights from Afghanistan

Collections and enrollments matter and increase the effectiveness of all other operations. As more elements of a selected population are enrolled and more forensic evidence is collected, there is a substantial increase in ratio of operations to matches. Considering the close-knit nature of a community and the consistent patterns of the insurgency—inherently a localized minority group of insurgents (and criminal elements) conducting the majority of attacks—the biometric program advantages to the combined team multiply with every ingest of biometric data. Even the out-of-towner or foreign fighter transient is placed at greater disadvantage.

Back-end database management, rapid dissemination, and data ingest from collections and enrollments are critical in maintaining speed and actionability for operating forces. The need for regular updates and watch list refresh directly enables BEI and follow-on successes. Information technology must continue to support the data transfer and dissemination processes via coalition and Afghan infrastructures.

The enrollment of biometric data, whether individuals are enrolled directly or through forensic extraction, is especially important for foreign fighters and transient populations. As stated earlier, these individuals are part of a population base demographic that could impact the security of multiple nations, demonstrating the global nature of the 21st-century security environment.

Incident tracking and analysis will discern patterns and enable better planning for security operations. Units should never enter an area for targeting raids, deliberate detentions, or clearance operations without knowing who they will likely encounter. "Never going anywhere for the first time" is a great proposition. The BEI-based process of developing biometric named areas of interest allows units at all levels to pull the known entities from the database and plot them (by site of enrollment or by associated event location) on the operations graphic as an overlay. Units can review the density of previously enrolled individuals, review in aggregate or by individual, assess threats based on matches to security incidents, and better predict where these individuals are likely to be ahead of the operation, especially when they integrate the biometrics with other all-source intelligence as part of the intelligence preparation.

Treat every event as a means to collect additional biometrics. The planning phase of every operation should include the biometric enrollment and battle drill for the collection and preservation of evidence for further forensic biometric exploitation. Treating every site or event as a crime scene and an intelligence operation will produce positive effects. The use of properly collected materials and the thorough processing of detainees will pay off in terms of prosecution and lead to additional actionable intelligence.

Continue to migrate biometrics to the application and support of rule of law. As the obvious endstate of a successful counterinsurgency campaign, rule of law in the 21st century must include the latest scientific advances in the field of criminal justice. Although biometrics has been introduced successfully to the Afghan courts, its use must become more widespread as not only an investigative tool, but also as credible evidence with an understanding of its value in ascertaining truth.

The full appreciation of the biometrics program and BEI is a key enabling factor in the continued progress of the counterinsurgency in Afghanistan. Moreover, the implications of future biometrics-related collections, exploitations, and applications are promising if not yet fully known. As we continue to see great gains and daily successes in Afghanistan by our ANSF partners, as well as direct payoffs for units that fully leverage current best practices, we can confidently state that the biometric component of the fight in Afghanistan is an investment in our future. Our national security forces have an ever-advancing capability in biometrics and BEI to reduce our collective risks, aid our allies, and defeat our adversaries. **JFQ**

Member of U.S. Geological Survey conducts site survey outside Sukalog, Afghanistan, with Marine escorts (U.S. Marine Corps/Sarah Furrer)

Strategic Implications of the Afghan Mother Lode and China's Emerging Role

By Cindy A. Hurst and Robert Mathers

As the 2014 withdrawal of U.S. and North Atlantic Treaty Organization (NATO) troops draws closer, the question on many minds is what will become of Afghanistan. Will the country slip back into its usual pattern of power struggles, be taken over by the Taliban, or continue to develop into a global economic player?

In June 2010, reports estimated that there are more than $1 trillion in mineral deposits within the borders of Afghanistan. While this may seem promising, there are many economic, logistical, cultural, military, and geopolitical issues to resolve before beginning the exploitation of those natural resources to help lift the country out of its current state. Export of strategic minerals could offer Afghanistan an opportunity to become a successful player in the global economy, but success is contingent on the creation and maintenance of a viable, centrally controlled police and military force, and

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Archeologists discovered ancient Buddhist settlement at Mes Aynak in Logar Province, which sits above enormous copper deposit (Jerome Starkey)

on the central government's ability to hold sway over its interaction with bilateral partners, as well as domestic tribes, through the years to come. A number of possible outcomes could occur based on the dynamics of the internal makeup, tribes and their influence within the country, and ties outside the country.

As foreign troops, equipment, and donation amounts dwindle over the coming years, Afghanistan will be drawn into the orbit of its immediate neighbors regarding influence and future direction. In both regional and global competition, the Chinese are ahead in the areas of direct investment and long-term outlook in the Afghan natural resources sector. Although this prospect may initially be distasteful to those who have shed blood and treasure over the past decade to create a viable state within Afghanistan, it may be the best way to achieve the end-state those nations strived to establish.

Amid the Chaos Hides a Pearl

Afghanistan, a country rich in culture and history, lags far behind much of the rest of the world economically, in infrastructure development, and as a socially integrated society. In the 1960s and early 1970s, the Soviets, along with the Afghanistan Geological Survey (AGS), were the first to map the country's geologic strata in great detail. However, their work was disrupted by the 1979 Soviet invasion, the occupation that followed, and the civil war. During the post-1996 chaos, a small group of Afghan geologists hid the geological reports produced during the 1960s in their homes in an effort to protect them from being destroyed by the Taliban.

The U.S. invasion of Afghanistan in late 2001 ousted the Taliban, and the long process of rebuilding began. Today, as U.S. and NATO forces strive to improve the security situation, the Ministry of Mines (MOM) is trying to kick-start the mining industry by opening up mining opportunities to foreign companies. The goals of the NATO coalition over the period 2001–2012 have generally been:

- destroy al Qaeda and its affiliates residing in Afghanistan and defeat or neutralize those elements posing a threat to the country and its neighbors
- train, equip, and enable a self-sustaining Afghan National Security Force (ANSF) that can protect the country from external and home-grown threats
- help create the conditions for economic recovery and development by supporting those Afghan institutions that lend assistance to this effort.[1]

For any major investment and development projects to succeed, the NATO-led mission must attain its goals in concord with the central government in Kabul. Despite continuous criticism, it could be reasonably argued that the International Security Assistance Force (ISAF) has been achieving those goals thus far. The al Qaeda network within Afghanistan has been effectively eliminated (although a Pakistani-based insurgency remains a menace), ANSF is nowadays a well-trained and well-equipped force that has reached its intended strength levels, and the organs of effective management of governmental programs are in place, albeit in some places still weak and/or embryonic. ANSF with its bureaucratic pitfalls and potential for corruption will be the most important organization to rehabilitate and therefore sustain and will be crucial to natural resource exploitation.

Out of the Ashes

Afghans have been mining gemstones such as lapis lazuli and emeralds for centuries. These small operations are archaic at best. Gemstones are mined the old way with pick, shovel, and dynamite. The miners are Afghan migrants who leave their families for half of the year to live in windowless huts in a place called Mine Town and earn up to $10 per day.[2] In the snowcapped Panjsher mountains, almost 10,000 feet above sea level, hundreds of untrained miners search for some of the highest quality emeralds in the world.[3] These operations have continued uninterrupted even during the fight against the Soviet Union in the 1980s and their profits helped to fund the mujahideen.[4] Meanwhile, larger extraction operations arose in cooperation with Moscow. In 1959 the Soviet Union developed a number of oil and natural gas fields and later three uranium mines and some copper mines, but large-scale mineral extraction remained underdeveloped. Afghanistan's mining industry began its renewal during the new millennium at about the time the AGS began undergoing its post-Taliban renovation. It was then that the hidden geological reports began to reemerge,

some even punctured with bullet holes from past battles.

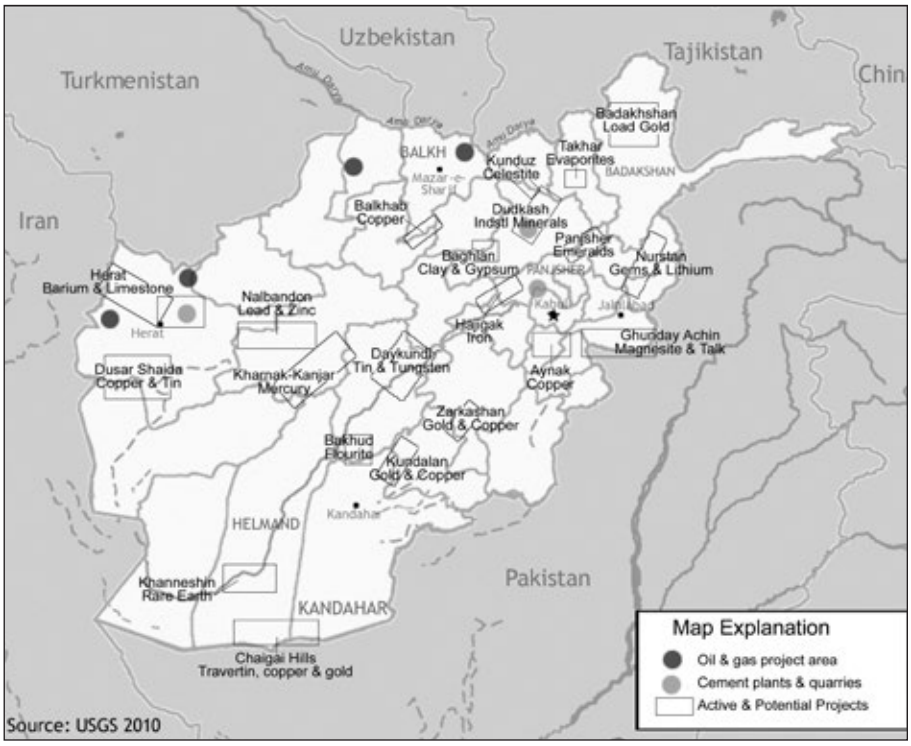
Between 2004 and 2007, scientists from the U.S. Geological Survey (USGS) joined forces with the AGS to track down existing information about mineral deposits within the country. They gathered information from Afghan, German, Soviet, Polish, Czech, and other sources and combined it to create the Preliminary Assessment of Non-Fuel Mineral Resources of Afghanistan. According to the assessment, the country has an abundance of non-fuel mineral resources such as copper, iron, sulfur, bauxite, lithium, and rare earth elements. The USGS determined that 24 high-priority areas required further analysis, believing that within these areas are world-class deposits of strategic minerals. In June 2006 the revitalized AGS reoccupied the newly renovated AGS building, equipped to access and study old and new data.[5]

In 2009 the USGS began working with the Department of Defense Task Force for Business and Stability Operations (TFBSO) using both airborne and satellite geophysics and remote sensing to gather new information to validate older information. The data gathered during phase one and subsequent work with TFBSO were used to create high-quality thematic maps and images that were put into a Geographic Information System framework.

The Race for Strategic Minerals

In early December 2011, Afghanistan began a licensing program to allow foreign companies to bid on various exploration and development programs throughout the country.[6] According to Jack Medlin, a geologist with USGS international programs, "If someone would go in and rehabilitate and restart the existing oil and gas fields, and if someone would go in and do exploratory drilling, in five to seven years there would likely be enough energy in Afghanistan, especially if you add in the coal, to meet the energy needs of the country. However, it simply has been slow to develop (the extractive industry) or restart."[7]

Afghanistan: Major Mineral Occurences



To date, offering huge incentives, Chinese companies have been the top natural resource investors in Afghanistan. Beijing has bought the rights to two major projects: the oil and natural gas blocks in Amu Darya and the Aynak copper deposit. In 2011 the state-owned China National Petroleum Corporation (CNPC) reached an agreement with Kabul on the final terms of a deal to develop the Kashari, Bazarkhami, and Zamarudsay oil fields in the Amu Darya basin. According to Jalil Jumriany, an Afghan MOM official, for the first 2 years CNPC investment will be $200–300 million. As part of the deal, CNPC agreed to pay a 15 percent royalty on oil and a corporate tax rate of 30 percent to work in the country.[8] In addition, CNPC will give up to 70 percent of its profit to the government with the project expected to bring almost $5 billion to Afghanistan within 10 years. Jumriany added that the oil field development project will be run by a 75/25 joint venture between CNPC and local investors and could create up to 7,000 jobs for locals. CNPC also plans to build an oil refinery within 3 years, which would be the country's first.

Despite the dilapidated state of the infrastructure and a relatively minuscule industrial base, Afghanistan's domestic requirement for petroleum—for transportation, housing needs, and electric power generation—is estimated at 20,000 to 40,000 barrels per day. Due to the absence of domestic production, the country must import all of its petroleum products. Projects such as the Amu Darya oil field and CNPC refinery will alleviate domestic demand and consumption needs.

In 2007 Afghanistan and the Metallurgical Corporation of China (MCC) signed the largest extraction contract between the host country and a foreign competitor. The $3.5 billion project is a 30-year lease to develop the Aynak copper mine, located 15 miles south of Kabul in Logar Province.[9] The mine has an estimated 11 million tons of copper, according to surveys in the 1960s.[10] Minister of Mines Mohammad Ibrahim Adel expects the mine to bring the government $400 million annually in fees and taxes in addition to an $800 million down payment from the developer. Moreover, China committed to build a

railway line, one or two power plants that will drive the mining equipment and supplement the regional power grid, and a village for workers complete with schools, clinics, and roads. The project is expected to create some 5,000 jobs.[11]

There are numerous other resources as well. Eighty miles west of Kabul in remote mountainous terrain lies the massive Hajigak iron ore deposit, and three mines have already been awarded to the Steel Authority of India, Ltd., a consortium of Indian companies. According to the Afghan MOM, the deposit is worth an estimated $420 billion and could bring in $400 million in government revenue each year while employing 30,000.[12] In addition, it is located close to the proposed MCC railroad north of Aynak. To be financially feasible, the deposit will need access to a rail system due to the weight of iron ore and the cost-to-benefit ratio comparison between using trucks versus rail cars. Afghanistan is also home to a massive world-class rare earth deposit. Rare earth elements are critical to hundreds of high-tech applications including key military technologies such as precision-guided weapons and night vision goggles. They are used in lasers, fluorescents, magnets, fiber optic communications, hydrogen energy storage, and superconducting materials.[13] China currently produces over 95 percent of the world's rare earth elements, and some experts believe the country will soon become a net importer of rare earths.[14]

There are an estimated 1 million metric tons of rare earth elements within the Khanneshin carbonatite in Helmand Province and an estimated 1.5 million metric tons in all of southern Afghanistan. The deposits are said to be of similar grade to those found in Mountain Pass, California, and Bayan Obo in China's Inner Mongolia, two of the world's top light rare earth deposits.[15] The main rare earth deposit in Helmand is located atop rocky volcanic terrain, which currently can only be safely accessed by helicopter. While the lack of infrastructure and difficult terrain pose a huge challenge to mining and processing these rare earth deposits, a bigger issue is the ongoing security threat. Helmand is notorious for growing poppy and is a hotbed of Taliban activity.[16] According to Mulla Muhammad Daoud Muzzamel, deputy governor of Helmand Province, while "foreign occupiers" have established bases in the province, "an absolute majority of these bases have been under complete sieges for the past few years."[17]

Helmand Governor Golab Mangal, however, and other sources are touting an overall improvement in the province. For example, according to Andre Hollis, a former senior advisor to the counternarcotics minister in Afghanistan, the tide is turning in the cultivation of opium poppy. Between 2007 and 2011, production decreased 38 percent. Hollis attributes the drop to a British-run program called the Food Zone. In this program, Afghan farmers are provided fertilizer, seeds, and a scheme to store various crops and transport them to markets outside of Helmand. According to Hollis, Mangal has been a driving force in reducing the opium poppy trade in Helmand. He is credited with taking steps to eradicate the crop, such as ordering the arrests of some family heads of households involved in the trade. The opium trade is a major source of funding for the Taliban; therefore, as Senator Dianne Feinstein pointed out, replanting opium fields with legitimate crops "can ultimately help to cut off financing to the Taliban . . . [and] will help to achieve the dual goal of strengthening Afghanistan's economy while weakening the Taliban."[18]

In addition to programs such as the Food Zone, it is conceivable that the successful mining of the Khanneshin carbonatite rare earths could also contribute to improving Afghanistan's economy, cutting off financing to the Taliban through job creation and the building of local infrastructure. Of course, the security environment has to improve dramatically first. While Afghan security forces are taking a more active role in leading stability operations in Helmand, their performance is inconsistent, being mainly determined by the caliber of individual leaders. The attainment of a stable environment in the province is still tenuous at best. Once the security situation does improve, it could take over 10 years to put in place all the infrastructure and logistics necessary to make such an extraction venture work. Even then, local expertise is virtually nonexistent and Afghanistan would still have to rely on foreign expertise and backing.

While mining rare earth elements might be simple enough, processing them is another story. They cannot be treated like emeralds or lapis lazuli; they must be separated through complex, multistep processes involving a variety of often-hazardous chemicals and acids. Then the ore has to be transported to another country that is willing to pay the high cost of shipping and processing. China's proximity and ties to the country and its expertise would make it an ideal candidate to direct the development of Afghanistan's rare earth elements industry.

China: Influence, Soft Power, and the Competitive Edge

Afghanistan has signed various long-term strategic/cooperation agreements with at least seven countries besides China: Australia, France, Germany, India, Italy, the United Kingdom, and the United States. However, the most effective strategic partnership in the long term would likely be with China.[19] Beijing seeks both mid- and long-term economic benefits from its growing investment in Afghanistan and hopes to decrease the potential for Islamic extremism born out of Afghan poverty. Since September 2001, China has taken various steps to strengthen its relationship with Afghanistan. In 2004 it relieved the Afghan government of all matured debts, and in 2006, during a visit by the president of Afghanistan, both countries signed the Treaty of China-Afghanistan Friendship, Cooperation, and Good Neighborly Relations. In March 2010 the president of Afghanistan paid another visit during which both parties signed a number of agreements on trade and economic development. China also applied a zero-tariff status to some products originating from Afghanistan.[20]

China's approach is different from that of the United States. According to

Chinese author Wang Jian, Washington attempts to defeat the Taliban through large-scale attacks. As the fighting spreads, "Taliban counterattacks are bound to intensify," and "it will be impossible for Afghanistan's future security situation to break free from arduous difficulties. The present situation has exacerbated the investment environment in Afghanistan, lowered the investment rate, and increased operational risks; security problems are becoming the biggest risk in mining investment."[21] Clearly, Wang's opinion ignores the billions spent by the United States on investments to alleviate poverty and rebuild infrastructure, not to mention its efforts against Taliban extremism, one of the pillars of China's professed fight against the "three-isms"—terrorism, extremism, and separatism.

The most marked ideological difference between Chinese and U.S. relations with other nations is best outlined in a 2008 report by the Congressional Research Service, which states that China is known to offer other nations opportunities in foreign investment and aid projects in a "win-win" situation. While these countries provide China with natural resources or a trade market in which to operate, China provides its aid under a policy of "noninterference" in other nations' political and economic realms without concern for corruption or any such unethical business practices as might exist.[22] That is, China turns its head away from ethics and directs its attention toward self-gain. On the other hand, the "the U.S. emphasis on shared democratic values, considered to be a pillar of American soft power, can be perceived in other countries as an obstacle to arriving at solutions to international problems."[23] Ethics and political correctness matter in the United States whether it is a realistic line of attack or not and whether the host country accepts the principle or not. The bottom line is that China and the United States do not adhere to the same moral and legal practices.

The Spread of Corruption

For any legitimate enterprise to flourish and for the creation of a civic and commercial system to operate normally, transparent and trustworthy institutions must be in place. As the withdrawal of U.S. and NATO troops draws nearer, corruption is becoming a major issue in Afghanistan. According to social activist Shafiq Hamdam, corruption "feeds the unrest" and "feeds the insurgency."[24] Transparency International's "Corruption Perceptions Index 2011" ranks Afghanistan as the fourth most corrupt country in the world after Somalia, North Korea, and Myanmar.[25] According to the United Nations Office on Drugs and Crime, Afghan citizens now pay twice the amount for bribes they paid 2 years ago. Transparency International estimates that the current level of $158 per bribe is equivalent to 37 percent of the average Afghan's annual income. Polls show that Afghans rank corruption as their top concern, over the Taliban, terrorism, or the economy.[26]

Some claim that this corruption probably has already filtered down into the minerals industry. For example, MCC was accused of winning its contract for the Aynak copper mine through a $30 million bribe paid to Mohammad Ibrahim Adel. Without "reliable evidence" and documents, however, Afghanistan's High Office of Oversight and Anti-Corruption refuses to investigate the allegations. Some observers have dubbed the mineral wealth in the country the "blood diamond of Afghanistan." Without adequate transparency and with the government's rampant corruption, Afghanistan's natural resources could easily be used to fuel further insurgencies or their revenues could end up in illegal coffers. Indeed, whoever controls the minerals has the opportunity to control the war.

One article described corruption in Afghanistan as daunting with 30 to 50 percent of the economy consisting of the illicit opium trade, which in turn fuels criminal and insurgent elements. The report further stated that "recent presidential and parliamentary elections were characterized by a high incidence of electoral pay-offs and fraud. There was also the scandal at the Bank of Kabul, replete with phony loans to the Afghan elite . . . and billions in U.S. aid funds, which have been misappropriated, worsening corruption despite belated attempts by U.S. officials to track expenditures more carefully."[27] The spread of corruption can be problematic in that it weakens the rule of law, debilitates the judicial and political systems, and causes citizens to lose faith in their government officials.

In October 2010, in an effort to fight corruption, the Afghan government passed a law that would allow the establishment of special tribunals to investigate suspected senior officials.[28] While measures are being taken to fix the problem, the troop withdrawal is quickly approaching and only time will tell whether corruption will be more contained after U.S. and NATO forces leave. Thus the question may not be whether corruption will remain prevalent in Afghanistan, but rather who is best apt to handle the ubiquitous corruption when the finger-waggers and nay-sayers are gone.

Other Hurdles to Overcome

While Afghanistan is plagued with security and moral issues that could delay or obstruct its success in the minerals industry, there are a host of other hurdles. Because Afghanistan is landlocked, it depends on neighboring countries to export its mineral goods to world markets. Therefore, it is critical to the mining industry to maintain good relations with its neighbors to diversify its outlets and remain flexible to market requirements. In that regard, roads and railway networks are crucial to any future export-based economic growth. Afghanistan's rugged terrain, remote locations, and extreme weather conditions make building any kind of transportation infrastructure more costly and challenging. Security concerns such as ongoing insurgency activity, which is more prevalent in the south, can also increase costs for shippers with added security and insurance premiums. Afghanistan runs the risk of having its infrastructure destroyed by insurgent groups.

Building a railway system is the simplest and most economical option for shipping minerals, but there is the

Excavated Buddhist shrine at Mes Aynak (Jerome Starkey)

problem of choosing a track gauge (distance between the inside edges of the rails that make up the track). According to Piers Connor, an independent consultant on global railway operations, the countries surrounding Afghanistan all have different gauges—a legacy from the days of colonial expansion.[29] Before any track is laid, Afghanistan has to decide which gauges to use, or backers must be prepared to take costly steps to overcome the differences.

In June 2012 engineers from the China Railway Company began researching the technical aspects of building the railway that would connect the Aynak copper mine to Uzbekistan as part of China's deal to extract copper. The cost is estimated at $4 billion.[30] The MOM in mid-2011 publicly proposed a viable alternative rail route running west to Iran, then along the Zaranj-Delaram Highway to the Iranian port of Chabahar. In late 2011, India appeared to be planning to construct this railway, allowing for additional export routes rather than relying on MCC's eastern rail route to Torkham. This is, above all, an effort by India to develop further alternative routes out of Afghanistan that do not cross Pakistan.

Access to water is another hurdle. Water is used throughout the mining process, from extracting the mineral to milling, washing, and flotation (bringing the target minerals to the surface after crushing and milling them). Huge amounts of water are also used for secondary oil recovery (water is injected into an existing oil reservoir to build up pressure, which allows more oil to be recovered). With water in short supply and the population depending on agriculture, farmers have been digging deeper wells, using pumps to reach scarce water to irrigate their lands. The search for obtainable water could create competition between the mining industry and other industries for supplies. Added to that, some observers fear the mining process could damage the environment. Afghanistan has little history of environmental protection, which has some observers wondering if the country is capable of engaging in mining and development activities responsibly.[31] Projects that prove damaging to the environment could easily prompt citizen protests and unrest, which would be detrimental to the country's leadership.

Finally, lack of technical expertise in all areas related to the mining and developing of its own resources makes the country heavily dependent on foreign assistance. Technical expertise is needed to achieve each step, from building up infrastructure, to mining and processing minerals, to distributing them. China, through its vast resources, is ideally suited to provide the technical expertise needed for success and has much to offer through its ever-growing global experience in the mining industry.

Conclusions

Afghanistan's economic issue is complex. While its vast mineral wealth would seem to offer an ideal solution to its hardships by creating jobs and trade, its infrastructure, regional vulnerability to neighbors and outside actors, education and expertise levels, environmental fears, rugged terrain, and lack of water are formidable barriers. Even smaller issues, such as differences in track gauges, can throw a monkey wrench into the equation. Yet these obstacles may not be impossible to overcome.

The consensus among Afghanistan's own analysts is that, more important than focusing on security and building up the country's military forces, Kabul needs to implement steps to build stability in the economic and social structures. Rohullah Ahmadzai, head of the media section of the Investment Support Administration in Afghanistan, stated that security can now be more effectively strengthened if more efforts go toward social and economic investment.[32] He pointed out that since mid-2011, when discussions about the possible departure of the International Security Assistance Force began to surface, there have been increased anxieties regarding the economy, especially in the private sector. Not only are Afghan investors wondering whether private investment opportunities will continue to exist; foreign investors are too.[33] It is a vicious cycle. Political and security stability is essential to investment in the mining industry. Equally, however, social and infrastructure investment must promote stability in the region. Without one the other cannot exist.

The Sino-Afghan relationship seems to be a win-win situation. China has the

technology, expertise, money, and political will to make a difference. The Chinese are taking a major risk putting so much into a country that ranks so poorly in the corruption index. However, while the risks are high in Afghanistan, there are many potential benefits to China. For one thing, Beijing is in desperate need of natural resources to help develop its economy; moreover, Afghanistan is ideally located to serve as a central transportation hub. Some observers might question the soundness of U.S. and NATO forces spending trillions just to pull out and have countries such as China come in and reap the profits gained through U.S. and NATO blood and money. Unfortunately, Chinese access to Afghanistan minerals is probably the most likely outcome and could prove to be the easiest solution.

China understands the regional stakes involved with Afghanistan's stability. It has its own Islamic insurgency in the western part of the country. Continued instability in Afghanistan can only exacerbate those risks. Accordingly, China is keeping a watchful eye on Afghan National Security Force development. Beijing's security-related bilateral engagement with Kabul, although modest, is probably aimed at increasing its influence and bolstering security for its investments. China hosts a small number of ANSF officers—around 60 per year—for training and has supplied small quantities of assistance for security and law enforcement agencies. It has also provided the ANSF with counterterrorism and mine-clearing training and is suspected of agreeing to fund the training and equipping of ANSF personnel responsible for guarding Chinese mining and infrastructure projects.

It is impossible to project in what direction Afghanistan will head and how its mineral wealth might or might not pull the country out of its current poverty and chaos. For now, however, the odds seem stacked against the country, and if there is economic success in Afghanistan's future, it will take years or decades to achieve even with China's aid. **JFQ**

Notes

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U.S. Coast Guard rescue swimmer deploys from MH-65C Dolphin during mass rescue exercise Icy Resolve 2013 (U.S. Coast Guard)

Improving Safety in the U.S. Arctic

By Heath C. Roscoe, Paul F. Campagna, and David McNulty

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On Friday, August 27, 2010, the MV Clipper *Adventurer*, a cruise ship carrying 128 passengers, ran aground on an uncharted rock off the Nunavut Coast while making its way from Port Epworth to Kugluktuk in the Northwest Passage. None of the passengers were injured, but they were forced to stay on the ship until Sunday, when a Canadian coast guard icebreaker arrived to ferry them to Kugluktuk.[1] It took 3 days for the icebreaker to arrive. If the *Adventurer* began to sink in frigid waters, could the Canadian government have responded in time? If the same event occurred off the coast of Alaska, could the United States respond in time?

Currently, the United States is not postured to handle the increase in human activity that is occurring in the Arctic. The Arctic capabilities of the United States are inadequate and action is required in the near term—the next 5 to 7 years—to operate in this more accessible yet still challenging region. In the immediate future, the area of gravest concern is safety. In coming years, Arctic sovereignty claims, commercial shipping, resource exploration, tourism, and increased military operations could drive multiple scenarios causing the region to become an arena of international cooperation, competition, or conflict.[2] As greater accessibility and commercial development expand, national interest and an urgency to ensure that the United States possesses the capacity to preserve freedom of navigation, provide safety of life at sea, protect its natural resources, and preserve the natural environment will increase as well.[3] For these reasons, the United States should immediately invest in search and rescue (SAR) infrastructure and icebreakers to support future regional safety needs.

Arctic sea ice melted to its lowest recorded level in 2012 and resulted in the opening both of previously inaccessible parts of the Arctic Ocean and of economic exclusion zones (EEZs). The biggest driver for opening the Arctic is simple economics: trillions of dollars worth of resources could lie below newly accessible areas. According to the U.S. Geological Survey, nearly 13 percent of

the world's undiscovered oil reserves and 30 percent of its undiscovered gas reserves are north of the Arctic Circle, a staggering 90 billion barrels of oil and 1,670 trillion cubic feet of natural gas.[4] Countries and corporations are posturing themselves to tap into this enormous potential wealth of oil, gas, and minerals. Melting Arctic ice during the summer months and shoulder seasons will increase human activity because of:

- increased tourism—primarily cruise ship traffic
- increased oil/gas/mineral/fish exploration and exploitation—economic drivers
- increased shipping—an increase in traffic to and from resource extraction sites and potentially cheaper trans-Arctic shipping routes.

Cruise Ships and Tourism

Maritime traffic in the Arctic is increasing. From 2008 to 2012, U.S. Coast Guard Arctic Maritime Activity data show a 100 percent increase of traffic in the region from 123 vessels to 247.[5] Though not a large numerical increase, it does demonstrate an upward trend. The increase in vessel traffic has heightened the probability of incidents and potential casualties that would require Coast Guard medical response/evacuation or SAR support. Of significant concern, cruise ship traffic in the Arctic exponentially increases the aspect of safety and potential undesired consequences. In 2007 more than half of Alaska's 1.7 million visitors were cruise ship passengers, and the economic impact of the tourist industry cannot be overstated. It provides a $1.07 billion economic benefit annually for the state and $767 million in direct industry spending. Despite the total cruise capacity in Alaska declining by 10 percent from 2009 to 2010, the industry experienced overall growth over the last 10 years. This trend is expected to continue.[6]

As passenger and cruise vessels increase in number and routes stretch further into the Arctic, SAR infrastructure and passenger safety requirements are likely to increase proportionally. Even today's relatively meager number of summer tourists cruising Arctic waters exceeds the limited emergency response capabilities of the local communities. Of most concern is the spatial compression of opportunity to successfully respond and conduct lifesaving operations. The Arctic's cold air and water temperatures, shifting pack ice, and unpredictable weather require the quick and efficient rescue of tourists aboard lifeboats or distressed vessels. Even limited exposure to cold weather and Arctic seawater reduce human endurance to minutes and the likelihood of long-term survival to nearly zero. These hazardous environmental conditions prevail in a region with scarce emergency resources and vast distances that result in lengthy response times.[7]

To address these stressors, the Arctic Council, an international body of Arctic nations, penned an Arctic SAR agreement that was signed by the U.S. Secretary of State in May 2011. The agreement is the first legally binding instrument negotiated under the auspices of the Arctic Council and the first legal accord on any topic among all eight Arctic states. The signing of the *Nuuk Declaration* demonstrates the commitment and cooperation to address emerging safety issues in the Arctic region. The agreement commits parties to provide appropriate assistance when incidents arise and to take other steps to address growing SAR requirements in the Arctic region.[8]

Economic Drivers

The Shell Oil Company has already invested 6 years and $4.5 billion in an effort to tap into the oil reserves off the North Slope of Alaska.[9] The U.S. Geological Survey projects that a good portion of this undiscovered oil lies off the coast of Alaska, within the U.S. EEZ. Heather Conley, a senior fellow for the Center for Strategic and International Studies, believes significant mineral deposits such as nickel, iron ore, tin, uranium, copper, and rare earth minerals are already mapped or postulated to be located throughout the Arctic. She argues that even though the full extent of these resources is not fully known, each of the Arctic nations is expending great effort to assess, access, and extract these resources.[10] For example Alaska, by way of the Red Dog mine, produces 10 percent of the world's zinc output. This accounted for 55 percent of the mineral value produced in Alaska in 2008.[11] In addition, the Alaskan mining industry produces zinc, lead, gold, silver, and coal as well as construction minerals such as sand, gravel, and rock. Alaska's five operational mines (Fort Knox, Greens Creek, Red Dog, Usibelli, and Pogo) provided more than 1,500 full-time jobs of the nearly 3,500 mineral industry jobs in Alaska last year.[12]

The Bering Sea is world renowned for its enormously productive, profitable, and sustainable fisheries. The Alaska Marine Conservation Council estimates the net worth of these fisheries to be $2.5 billion annually.[13] Seven of the top 30 ports for fishery landings, by both weight and value, are located in Alaska. Dutch Harbor-Unalaska is the busiest fishing port in the country, harvesting 612.7 million pounds of fish in 2008 (the last year for which statistics are available). Furthermore, Naknek-King Salmon, another major Arctic fishing port, processed 105.2 million pounds of fish in 2008. The combined catch exported through both harbors was valued at over $260 million.[14]

Shorter Shipping Routes

Many journalists, economists, and academics have been looking at the utility of Arctic Sea routes (Northern Sea Route along Russia's coast and the North West Passage along the Canadian and U.S. coastlines) as a cost saving measure for transshipments. The Northern Sea Route along the Russian northern coast could reduce a maritime journey between East Asia and Western Europe from 21,000 kilometers (km) utilizing the Suez Canal to 12,800 km, cutting transit time by 10 to 15 days.[15] The summer of 2011 saw a record 33 ships carrying 850,000 tons of cargo navigating the Northern Sea Route off Russia's northern coast. This year's shipping season may see up to 1.5 million

tons of cargo. The development of Arctic offshore hydrocarbon resources and related economic activities will also improve the integration of the Arctic economy into global trade patterns.[16]

However, Stephen M. Carmel, senior vice president of Maersk Line, Limited, has questioned the viability of global Arctic transshipping. Carmel argues that Arctic shipping routes do not offer an attractive alternative to the more traditional routes and are highly unlikely to be advantageous in the future. He believes the variability in transit time due to shifting ice and unpredictable weather is unacceptable in a world of "just in time" supply. He further notes that variability eliminates network efficiencies. Arctic routes are useful for only a small part of the year and are more expensive due to poor economies of scale.[17] Therefore, Carmel would not expect to see a large increase in commercial transit shipping.

Regardless of whether trans-Arctic shipment is slow to develop for reasons outlined by Carmel, the traffic supporting the worldwide delivery of extracted resources *from* the Arctic is increasing dramatically.[18] Oil and gas developments in northern Russia have resulted in a higher demand for shipping to and from that area. A similar trend was seen in 2012 off the coast of Alaska as Shell had a small armada supporting its oil-drilling mission. The Coast Guard reported a steady increase in Bering Strait transit from 247 vessels in 2008 to 484 in 2012.[19]

Risk

Given the safety concerns cited, the authors developed a list of probable incidents/events from Coast Guard SAR historical documents the may require a U.S. safety response in the future. Although not all-encompassing, the 10 potential scenarios are listed most to least likely. The wide array demonstrates the fragility of the Arctic and the scenarios serve as driving factors as the United States considers future capacities and capabilities:

- Medical Evacuation/nonmaritime medical transports (currently 3 percent of all SAR cases)
- SAR operation small maritime vessel (fishing/recreational)
- small oil spill/discharge in the Chukchi or Beaufort seas
- downed aircraft (small passenger) SAR mission
- vessel runs aground, caught in ice, or sinks
- emergency barge resupply for North Slope community
- large oil spill from drilling operation
- large oil spill from tanker operating in Arctic
- mass rescue operation (MRO) downed jetliner
- MRO cruise ships/ferries.

Despite assuming a lower position on the list due to probability of occurrence, MROs would be nearly impossible to carry out given currently assessed response shortfalls. For example, if an MRO or large oil spill incident occurred on the North Slope of Alaska, the closest Federal SAR and oil spill response is 820 miles away in Kodiak. Current oil spill response capabilities include four Spilled Oil Recover Systems equipped on 225-foot buoy tenders home ported in Alaska at Kodiak, Sitka, Cordova, and Homer; an aerial dispersant delivery system staged in Anchorage as a backup to commercial venders; and Federal on-scene coordinators located in Juneau, Anchorage, and Valdez with incident management expertise and limited prepositioned oil response equipment.[20] Given these sparse and widely dispersed assets, the long-term environmental impacts of a spill in the Arctic Ocean could prove cataclysmic.

U.S. Safety Response

The primary Federal agency responsible for operational safety in the Arctic is the Department of Homeland Security (DHS) with the Coast Guard as its operational arm. When directed, U.S. Northern Command provides defense support to DHS in order to support the safeguarding of human life, the environment, critical infrastructure, and property. The District 17 (D17) commander, headquartered in Juneau, is the North Pacific SAR coordinator and has the task for maritime and aeronautical SAR responsibilities in the maritime region of Alaska, including the North Pacific Ocean and the U.S. slice of the Arctic. Because Alaska is vast and remote, D17 relies on other government and civilian agencies for SAR missions. For example, the National Guard, U.S. Air Force, Alaska State Troopers, dozens of small fire departments and volunteer rescue organizations such as SAR Dogs, Civil Air Patrol, and Sitka Search and Rescue are important augmentation resources that ensure timely SAR coverage. Furthermore, in the far north, D17 relies on local North Slope Borough Bell 412SP helicopters and fixed-wing aircraft for SAR requirements.[21]

The nearest Coast Guard air station to the Arctic is in Kodiak and requires a 4-hour fixed-wing or 10-hour rotary-wing flight to support the most northern Alaskan population of Barrow, a distance of 820 miles. By sea, Coast Guard cutters routinely patrol the Bering Sea, but it requires at least 3 days once embarked to reach the Arctic Ocean.[22] In 2012, the Coast Guard in its *Seventeenth Coast Guard District Area of Responsibility Analysis Fiscal Year 2012* identified the two primary challenges to successful Arctic SAR operations as distance (the time it takes to arrive on the scene to effectively respond to distress) and infrastructure (the lack of equipment, personnel, and locations to effectively respond to distress).[23]

Requirement for the North Slope

Strategically positioning SAR infrastructure in key locations in the U.S. Arctic would decrease response times by significantly reducing transit distances. There is an urgent need to respond quickly in the Arctic, as the prevention of injury and loss of life depends on timely SAR response, prompt evacuation, and the application of medical and other emergency services. Effective responses can only be accomplished by the design and implementation of appropriate SAR management policies and programs, supported by appropriate physical infrastructure and well-trained personnel.[24] The Coast Guard is postured for effective response with the

exception of not having an Arctic SAR stepoff location to launch SAR missions. During an interview in December 2012, Rear Admiral Thomas Ostebo commented that Barrow would be the ideal location for SAR: "Barrow is Alaska's most northern and largest town [on the North Slope] and is centrally located in the U.S. Arctic. It is also the center of power for corporate, tribal, and economics of the North Shore Borough making it the best location for investment of SAR infrastructure."[25]

Despite its advantages as a key location for SAR support assets, Barrow's central North Slope position creates significant logistical challenges due to a limited road network and port access. No roads link Barrow to the rest of Alaska, which prevents ground shipment of supplies, and the lack of a deep-water port requires extensive use of small landing craft and fuel barges to deliver supplies to the mainland. Given weather impacts, Barrow's primary line of communication is by aviation from either Anchorage or Fairbanks. Today, supplies and equipment required to execute SAR missions are flown into Wiley Post–Will Rogers Airport, the newest airport on the North Slope, serviced by Alaska Airlines. Lack of port facilities means that marine cargo bound for Barrow is transferred from barges offshore to landing craft. U.S. cutters can anchor 1,200 yards off Barrow in 30 feet of water to receive supplies and transfer personnel by small boat, but the anchorage is exposed to weather from all directions. Barrow is also a destination for small cruise ships carrying as many as 400 passengers, who must also be ferried on small boats.[26]

D17's 2012 Arctic Shield exercise demonstrated Coast Guard ability to execute a seasonal SAR capability from the airport in Barrow. D17 staged two HH60 helicopters along with aviation and communication detachments from June through September during Shell's drilling season. The operation was deemed a success because of the SAR proof of concept but also due to the robust and positive engagement plan and the partnership D17 fostered with the North Slope Borough communities. Nevertheless, there were logistical challenges with even this small footprint. For example, fuel for the HH60s had to be flown in using C-130s, but hanger and berthing facilities, while manageable, were subpar for the requirements.[27]

Another SAR location to consider is Prudhoe Bay. While half the size of Barrow with approximately 2,000 people, many of whom are transient workers supporting oil facilities, Prudhoe Bay has an interconnected road network and limited port infrastructure. However, it is disadvantaged by being 200 miles east of Barrow, closer to the Canadian border, and farther from potential SAR events along the western Alaskan Arctic. Prudhoe Bay is the unofficial northern terminus of the Pan-American Highway, which was used during Arctic Shield 2012 to transport the Navy Supervisor of Salvage (SUPSALV) tactical oil spill response equipment. Its limited port facilities allowed the SUPSALV equipment to be loaded onto a commercial barge and shipped to the exercise training site near Barrow. The limited port infrastructure can only support small ships and barges with 6 to 8 feet of draft. Resupply of a Coast Guard cutter would require a helicopter from the public Deadhorse Airport or barge out to approximately 12 nautical miles (nm) where the vessels could safely anchor, much further than the 1,200 yards at Barrow.

Neither location is ideal to satisfy requirements without major investment, but the United States must be able to operate in this area to support tourism, shipping, and oil exploration and drilling. Barrow offers a central location that is critical to reducing the time-distance factor. Any enhancement of Barrow's infrastructure will require coordination with the North Slope Borough. A seasonal SAR capability could be established—when the ice retreats in the summer—to cover oil exploration and drilling along with recreational and cruise vessels. It is possible the Coast Guard could lease facilities in Barrow to support aircraft maintenance, fuel storage, lodging, and command and control. However, even a small footprint places a significant burden on the local community, where resources are expensive and supply is limited. If it is not possible to lease facilities because of the strain it places on the community, the United States should invest in commercial off-the-shelf expeditionary-type structures/facilities similar to what the Department of Defense (DOD) used during Operations *Enduring Freedom* and *Iraqi Freedom*. Washington is not in a position to invest in major construction without further study, so temporary facilities make sense as a stopgap measure.

Another import consideration is refueling operations. Once on scene, maritime assets are limited both by fuel capacity and the distance to a refueling station. With the closest fueling point to Barrow nearly 1,000 nm away in Dutch Harbor in the Aleutian Chain, on-station times are dramatically reduced. Even under ideal water conditions, the Coast Guard does not have the surface capacity to support sustained presence in the Arctic.[28] Ostebo identified one possible solution. Shell obtained a refueling barge that supported 22 maritime vessels during its oil exploration in the Chukchi Sea, and he believes a similar contract to support cutters and other ships is possible for future missions. On-station refueling would allow for sustained maritime presence in the Arctic Sea before returning to Dutch Harbor for resupply is required. Regarding air platforms, once an adequate supply of aviation fuel is housed at Barrow, the Coast Guard can use the location to sustain air presence in the region.

Emerging Need for Additional Icebreakers

When issues begin to arise in the Arctic, the United States will need a maritime surface presence sufficient to support safety and response. Presence enables the Coast Guard to respond to vessels in distress, thus saving lives and protecting against potential pollution. Presence also ensures adequate enforcement of vessel routing regimes and compliance with safety, environmental laws, and treaties.[29] To maintain a presence in the Arctic, the United States needs an adequate number of icebreakers or ice-capable ships. Presently, there is only one operational surface ship capable of

operating in ice. That ship, the USCGC *Healy*, is considered a medium icebreaker capable of cutting through 4.5 feet of ice at 3 knots, and it has less than 20 years of service life remaining. The *Polar Star*, a heavy icebreaker commissioned in the 1970s, is capable of breaking through 6 feet of ice. It recently finished a major refit and is undergoing sea trials. The *Polar Star* was expected to return to service in early 2013 with 6 to 7 years of remaining service life.[30] The Coast Guard placed the *Polar Sea*, the sister ship of the *Polar Star*, in "commissioned but inactive" status October 14, 2011, because of a blown engine.[31] For comparison, Russia has up to 25 icebreakers, and several nuclear-powered icebreakers can cut through ice 6 to 9 feet thick. China is building an icebreaker for launch in 2014. This will be China's second—it purchased its first from Ukraine in 1993.[32]

Since September 2010, at least three reports have identified the Coast Guard's challenges in meeting its current and future icebreaking mission requirements in the Arctic, as well as the hurdles it faces in acquiring new icebreakers.[33] A January 2011 report from the DHS Office of the Inspector General noted that the Coast Guard and other U.S. agencies are unable to meet their current Arctic mission requirements with existing icebreaking resources. The report highlighted that Coast Guard resources are unlikely to meet future demands as well, in part because the agency has not followed its life-cycle replacement plan, which requires replacement of icebreaking ships after 30 years of service. The report concluded that without funding for new icebreakers or major service-life extensions of existing vessels, the United States would lose all of its polar icebreaking capabilities by 2029.[34]

Sent to Congress in October 2011, the *U.S. Polar Icebreaker Recapitalization Report* addressed recapitalization of U.S. polar icebreakers. The report addressed ways to meet mission requirements by assessing options for rehabilitating the icebreaker fleet including new icebreaker construction, refurbishment of *Polar Sea* or *Polar Star*, and leasing. The report found that the most cost-effective option would be to build two heavy icebreakers while performing minimal maintenance to keep the existing icebreakers operational. Given the timeframe associated with building new ships, the report concluded that the Coast Guard must begin planning and budgeting immediately.[35]

A third report, *The High Latitude Study*, included a broader analysis of the Coast Guard's icebreaker needs. Presented to Congress in July 2011, the report found that the common, dominant contributor to the significant mission effects in the Arctic is a gap in polar icebreaking capability, and that the existing icebreaker fleet is insufficient to meet the Coast Guard's statutory mission requirements in both the Arctic and the Antarctic. To fulfill these mission requirements, the study found that the Service needs a minimum of six icebreakers (three heavy and three medium). If the requirements for a U.S. Navy presence are taken into account, the Coast Guard would require three additional heavy icebreakers and one additional medium icebreaker, for a total of 10 icebreakers.[36]

The Coast Guard estimates it will take 8 to 10 years to design and build a new icebreaker. It is projected that it will cost $859 million to construct a new *Polar*-class heavy icebreaker and $1.2 billion to reconstruct the *Polar Sea* or *Polar Star* from scratch to the current standard for heavy icebreakers.[37] Other options include leasing icebreakers or jointly funding icebreakers through the National Science Foundation (NSF) or DOD. Currently, these options do not appear viable. DOD is working through its own budget constraints. Using the NSF is possible, but it might pull the icebreaker away from its primary missions to support scientific research. Lastly, there have been bad experiences with leased icebreakers that could not fulfill their mission requirements. Sweden called the *Oden* home, breaking its commitment by ending its resupply and science mission support of the U.S. Antarctic McMurdo Research Station and putting the entire 2011–2012 research season in jeopardy. The NSF was eventually able to commission a Russian vessel.[38]

The good news is that the Coast Guard budget includes $8 million in acquisition funding to initiate survey and design activities for a new polar icebreaker. The Coast Guard's Five Year Capital Investment Plan includes an additional $852 million in fiscal years (FY) 2014–2017 for acquiring the ship. The Coast Guard anticipates awarding a construction contract within the next 5 years and taking delivery within a decade, just as *Polar Sea* retires. The project to design and build a polar icebreaker is a new acquisition project initiated in the FY13 budget.[39] The next step is for Congress to act on the Coast Guard's budget to modernize its icebreaker fleet so it has the capability to perform its polar missions. Construction of this new icebreaker will still only give the Coast Guard two operational icebreakers after 2020, when the *Polar Star* meets the end of its service-life extension.

The *High Latitude Report* listed a requirement of up to six icebreakers to meet statutory requirements into the future. That number may be what is required in the far term, but near-term requirements suggest that the United States needs a minimum of three icebreakers to support the following missions:

- Antarctica Presence—scientific research and McMurdo resupply
- Arctic Presence—enforcement of vessel routing regimes, compliance with safety, security, and environmental laws/treaties, freedom of navigation, response to vessels in distress, SAR, protecting against potential pollution
- Arctic Research/Thule Air Force Base resupply/Flex—support to the NSF, resupply of Thule, and an option to flex to any location in case a crisis or emergency arises.

Deciding to keep the U.S. icebreaker fleet "status quo" in the near term would risk response capability for incidents in the Arctic and place the United States at a strategic disadvantage vis-à-vis other countries that are committed to increasing their role in the Arctic. Washington needs to start building two icebreakers to fill this need immediately because the *Polar Star* service life is extended to 2020 and the *Healy* to 2030.

The United States needs to take steps now to invest in Arctic safety capabilities to operate in a more accessible region as human activity in that region increases. The Coast Guard is currently not funded to handle statutory missions to support this increase in activity. To boost national Arctic capabilities to protect and promote U.S. interests, Congress must ensure that the Coast Guard is funded appropriately. Investing in a seasonal search-and-rescue location in Barrow, Alaska, and building two additional icebreakers would allow the Nation to have a near-term Arctic presence and protect its safety interests. Not investing in these Arctic safety capabilities in the near term would risk the ability of the United States to respond to incidents and possibly save lives or prevent environmental catastrophe. **JFQ**

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Mountain near Kabul, Afghanistan
(U.S. Air Force/Michael O'Connor)

Forging a 21st-century Military Strategy

Leveraging Challenges

By Robbin F. Laird, Edward T. Timperlake, and Murielle Delaporte

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As the United States comes to terms with the past decade and faces the future, what will its military strategy be? The answer is not likely to come in briefing slides but rather in shaping both concrete steps forward and responses to new and ongoing crises. Although it will be nationally based, any U.S. military strategy will be dependent on what allies and adversaries do. It will not be forged in a vacuum; instead, it will be highly interactive with the shaping of new operational concepts and approaches.

When the United States deals with a massive challenge such as shaping a strategy for the vast Pacific, and at the same time has limited assets, it is impossible to imagine a strategy that does not build from allies back to the United States and

from the United States back to allies. Critics who point out the shortfalls of U.S. forces often forget that platforms do not fight alone and that the United States will not fight alone in the Pacific. There is always the *reactive enemy*. The term often refers to an asymmetric enemy or strategy. But strategy is usually asymmetric as one seeks to enhance one's advantage to the disadvantage of the other. This occurs the other way as well. America and its allies can shape capabilities that severely disadvantage adversaries.

With financial pressures has come a new pessimism that seeks to confront mainly problems that can be solved using yesterday's force structure. But with the force being remade by technologies that will ripen in the next decade, there are significant possibilities for innovation and reshaping the force. The decade ahead is assuredly not the decade behind. Most notably, it will not be a decade of the type of land wars we have just seen, which are ending without enthusiastic chants of victory. To provide a sense of how U.S. strategy might be shaped, we address four current operational dynamics that could be leveraged to shape the future. These dynamics cross the spectrum of conflict.

The first case is the Afghan transition. We examine an aspect of the transition—the airpower transition—to see how it might be exploited to shape a residual leave-behind capability that will be important to the United States and that could shape a global model for other situations. The second case expands the understanding of the key role of expeditionary logistics in shaping an insertion force that could operate rapidly but also transition effectively. The French operation in Mali is a key expression of this new approach—how landpower could operate in the context of a joint and coalition force structure. The third case examines the emergence of distributed military operations in the Pacific led by the U.S. Marine Corps–U.S. Navy team. Here the maritime force is driving an innovation approach to the challenges. "Jointness" is a quality of 21st-century operations, but for innovation to occur there needs to be a lead force whose core competencies can shape the way ahead for the joint and coalition force. The fourth case examines the challenge of deterring North Korea in the second nuclear age. At the heart of this challenge is enhancing the credibility of American and allied forces facing North Korea. How might reform of the U.S. presence in South Korea be part of a broader redesign of deterrent strategy? Here, the Air Force drives the kind of innovation necessary and leads the way in reshaping the force structure to deal with the threats of the second nuclear age.

Case 1: Counterinsurgency Air Forces in Shaping Partnership Possibilities

In the debate over the acquisition of the light-attack aircraft for Afghan forces, a key opportunity to shape a 21st-century option may be missed. A light-attack aircraft such as the Embraer Air Super Tucano, when combined with several other rugged air assets capable of being maintained in a variety of partner nations, could not only form a core capability crucial to the defense of the partnership nation, but also provide a solid baseline capability for a long-term working relationship with the United States or its allies.

The value of a counterinsurgency (COIN) aircraft versus a more advanced fighter can be lost when the issue is 21st-century higher end warfare. A rugged aircraft such as the Super Tucano can operate for longer periods at considerably less cost than advanced fighters. It can be configured with command and control (C2) and intelligence, surveillance, and reconnaissance (ISR) capabilities and links and can dialogue with forces on the ground.

Colonel Bill Buckey, USMC (Ret.), the deputy commander of the North Atlantic Treaty Organization (NATO) Airbase at Kandahar in 2009, explains:

One of the things that the special operations forces, who started the idea of the whole Imminent Fury piece, wanted was the ability to have a partner in that light attack platform; a TAC-A [tactical air commander–airborne] *or supporting arms coordinator that would be above them in the air and who, if things got ugly, could then marshal in other aircraft. The guys sitting at Creech* [Air Force Base, Nevada] *can't do that. . . . The individual in the backseat of the aircraft is the one that's going to be communicating to these jets who are still 30 minutes away—15 minutes away, an hour away—and giving them the target brief and the whole situational awareness piece of what's going on while they ingress, which is something that your guy at Creech is not going to be able to do. . . . But now that's the tactical piece. The operational piece is back to the whole COIN environment. Again,* [perhaps what] *you're trying to do in a COIN environment is drive your cost of doing business down as close as you can to the level of the other guy; right now, UAVs* [unmanned aerial vehicles] *ain't cheap. . . . You've got a tremendous logistics piece; you've got the sophisticated communications infrastructure required to fly them. You've got the whole piece back in* [the continental United States] *in order to operate them. Your cost of doing business is huge and you also have reliability issues. The accident rates are not great with UAVs right now. . . . And in terms of that ability to act as FAC-A* [forward air controller–airborne], *that's something that you just can't get with a UAV.*[1]

Even though the acquisition of such aircraft for U.S. forces is not on the table, their use by partners is already prevalent in many parts of the world. Partnerships with allies flying such aircraft provide interesting possibilities. This is not just an abstraction but has been demonstrated by 12th U.S. Air Force working with the Dominican Republic air force. The 12th provides ISR support to other nations' combat air capabilities. U.S. Southern Command (USSOUTHCOM) and the Dominican Republic air force have combined—with USSOUTHCOM providing an ISR input and the Dominican Republic flying the Super Tucano—the same planes that will be used by the Afghans. This remarkable and replicable success is made possible by U.S. "hi" ISR technology in partnership with the Dominican Republic "lo" technology, the Super Tucano.

Global Hawk UAV returns after supporting War on Terror (U.S. Air Force/Chad Bellay)

The opportunity to further evolve such a model of cooperation is being forged in the period of transition in Afghanistan. The Air Force, NATO, and other allies have been working for many years to shape an unheralded airpower transition. The core idea has been to provide the Afghans with an integrated air force that can provide for their needs and be robust and easy to maintain, and then partner with this air force. That would allow the United States and its allies to leave a force behind that could provide mobile ground forces supported by correlated ground assets. This sound Western force package would then be able to work effectively with the core Afghan air force as well. A real transition could be forged, one still able to engage in effective combat against the Taliban.

The broad trajectory of change for the Afghan air force has been to move from a Russian-equipped force in disrepair to shaping a mixed fleet of aircraft able to support the various missions that the Afghans need: transport, ground support, counterinsurgency, inverse synthetic aperture radar (ISAR), and strike. The core fleet of aging Mi-35s and AN-32s will be replaced by a mixed fleet, along with capabilities to replace the battlefield lift provided by the Chinook heavy-lift helicopter.

Shaping the right fleet is crucial to shaping an effective training mission. Putting a reliable and rugged and easily maintainable lift aircraft with the Super Tucano and the Mi-17 fleet along with Cessna trainers is the core force for the Afghan air force going forward. Interviews with American and French military operators in Afghanistan have hit hard on a key theme: airpower is central to today's operations, and there is a clear need to arm the Afghan allies with a functional capability along the same lines. The Afghan military population has come to appreciate air support as a key element of future success and security (in particular, a Medevac ability being part of any operation). As Major General Glenn Walters, USMC, commented when he returned from Afghanistan:

Our role will be to support the Afghan security forces. You're going to have to support those guys, and they're going to be much more distributed. You're not going to have the battalions out there that you support people on the FABs [forward air bases] *have. It's going to have to be from a central location. And the QRF* [quick reaction force] *is going to have to be good, and it's going to have to be there quickly. In the end, we have to be able to prove to the Afghan security forces that if something happens, this platoon is good enough until we get someone in there. . . . If you ever need more than a platoon's worth of trigger pullers in a district center, the V-22s* [Osprey tilt-rotor aircraft] *is how you're going to get there quickly and decisively enough to matter. . . . The Afghan National Army and Afghan Security Forces understand, from their perspective, how important air is. We have made them big consumers. They know that the air is there for them; they'll go out and operate. I've had more than one brigade commander tell me that if it wasn't for the medevac,* [if] *it wasn't for the resupply, and if it wasn't for the aviation fires, he didn't think he could get the battalions out operating like they do. Because they've*

learned that if they get hurt, we'll fix them. They know if they run out of bullets, we'll get them bullets. And if they're hungry or thirsty, we'll get them food and water. . . . As the U.S. looks forward to work with allies worldwide in the years to come on COIN and related operations, the U.S. will not be bringing the entire gamut of capability to the party. Working with allies in current and projected financial conditions requires a new formula: the U.S. supports allies who can fend for themselves, up to a point.[2]

Western powers are facing the endgame in Afghanistan. If the Afghans as a nation are going to work together to shape a COIN and defense strategy, airpower is a crucial lynchpin. Working together with an air-enabled Afghan force, Washington could continue to influence the necessary outcomes in the war against terror and at the same time pull out most of its troops. That would be a war-winning formula the Army might want to consider for its global future.

Case 2: Expeditionary Logistics in Shaping New Combat Capabilities

The revolution in logistics seen in air and maritime support for ground forces can reshape how these forces operate. The French experience in Mali provides a case in point.[3] French forces were requested by the Mali government to intervene to defend the capital and the southern part of the country almost at the last moment. Because of a rapid political decisionmaking process, because of French presence in the regional theater linked to ongoing military missions (for example, the Épervier operation in Chad since 1986 and the United Nations Unicorn operation in Côte d'Ivoire since 2002), and because the French have been building an integrated rapid deployment force forged around expeditionary logistics, the French were able to intervene and move rapidly. This allowed French forces to attack the aggregated enemy forces. What is often forgotten is that extremist forces may disperse to avoid destruction, but to have a real political effect they must aggregate and seize territory. One only has to remember the teachings of Mao Zedong. What this means as well is that an outside force configured and poised to attack aggregated enemy forces moving against definable territorial "prizes" can be attacked as such.

The French entered at the beginning of the operation, first with airpower directly initiated from French air force bases and then more rapidly with massive air-ground forces. As a result, they have been forming a 21st-century caravan approach where logistics and operational elements are combined simultaneously into a single force. There is no classic approach to the rear and front. The forces are expeditionary and carry their capabilities with them, adjusting those as they transition to new phases.

In what could be called phase one, France conducted its own version of "shock and awe." A rapid and massive offensive was generated to block the insurgents from reaching Bamako, and the troops were within reach of the capital within a matter of days. The French government mobilized an insertion force on January 11, 2013, after a request for help came from the president of Mali. A month later the commander of French army aviation in Mali explained:

The enemy has been taken by surprise and is now destabilized. Because of the lightning speed of the maneuver by the Serval [the French name for the operation] *force, the insurgents are now fleeing and not willing to fight as they did not expect such concentration and mobility heading their way.*

This effort has been possible due to several factors. The first is the speed of the French forces and their ability to act from the outset in a matter of hours as far as air operations were concerned. For example, on the air force side, the first strikes made by the Rafale fighters taking off from FAB Saint Dizier were done thanks to a 9-hour, 35-minute flight involving five air-to-air refuelings.

On the army side, it took only 2 days for the French army air mobility group (GAM for *Groupe aéromobile*), involving some 300 personnel and 20 helicopters, to be operational after a strategic airlift from the South of France to the capital of Mali and in autonomous operation with the help of the logistic battalion simultaneously deployed with the strike force. As a French officer involved in the operation noted:

After leaving Bamako for Sévaré five hundred kilometers further on January 26th, then leaving again for Gao on February 6th five hundred kilometers further, I have available the support tools of nearly a full regiment ranging from my air control tower . . . to spares allowing me to last for months.

The rapid surge of the Serval force, which eventually grew to three battalion-size task forces (GTIA for *Groupement tactique interarmes*), has also been facilitated by France's historic presence and defense commitments in this part of the world. France was able to leverage various national assets currently based in other African countries as well as full support from those governments.

Mobility and concentration of forces have also been rendered possible by good C2 and joint training and experience between the French air force (Rafale and Mirage 2000D fighters and N'Djamena-based joint force air component commander), the navy (with the amphibious assault ship BPC *Dixmude* bringing ground elements ashore and with the Atlantique 2 maritime patrol aircraft crucial to coordinate close air support operations between army aviation and ground troops), and the army. This is also true at the joint level, since good C2 and joint training have been key to operating the international transport and refueling fleet which joined in Serval.

While executing phase one, the French were preparing their transition to the next phase, in which regional peacekeepers and the Mali army would become the key force to provide stability. Moreover, France is keeping a modest force in place that can aid in the process and also move rapidly within the country to defend itself and its allies.

From the beginning, the French intervention was not seen as an isolated

event, but rather one designed to clear the path for coalition forces to take over the mission. For France, the North Africa region is as significant as Mexico is for the United States. Ongoing engagement is a reality in a region of close proximity with high strategic consequences and many foreign nationals in residence.

Regional support is absolutely key to prolonging the deterrent effect of the initial French military action and has been made possible by the months of preparation before it occurred ahead of schedule, as is the effort of the international community via the United Nations and/or other organizations. The latter is slowly but surely picking up with a growing number of allied logistic and support assets being gathered to help sustain French and African armed forces in a theater where vast elongations and the ability to hold difficult territory are the key challenges.

Transport aircraft and tankers were sent early on by the United States and European countries, while the Eindhoven-based European Air Transport Command played its role in providing assets. From a French perspective, the goal has been to start reversing the balance between supported and supporting forces as early as April 2014 in order to prevent the "Afghanization" of the conflict feared by many, but in a secure, responsible, and coordinated manner. Indeed, as the commander, General Grégoire de Saint Quentin, has been stressing, Serval not only boosted the Malian armed forces' confidence to keep on fighting, but also served as a catalyst for the African forces to mobilize themselves and play the regional role to which they have been aspiring.

Phase three could thus be characterized as shaping the postinsurgent Mali, and here, working with the Mali government and African forces is central. In this phase, European support and trainers will be a key part of shaping whatever is possible regarding stability in the country. European military training, which is also kicking in, will be another major factor in ensuring that African ground troops have the best chances to secure the whole country.

In other words, the French experience in Mali is about building a first entry insertion force with expeditionary logistics fully integrated with the maneuver forces. This force is then able to work within the region and become a lead element in its own transition and withdrawal. The French approach is very much about how to intervene and trigger coalition operations to stabilize the situation with regional partners rather than simply staying in place a long time. It is shock and awe as a counteroffensive and deterrent to the enemy, as well as a trigger space for coalition success, and not shock and awe for the sake of staying.

Case 3: Shaping a Distributed Operations Force for the Pacific

The United States is in the midst of its pivot to the Pacific and the Marine Corps is in many ways the pivoting force for this action. The Service is not only redeploying in the region but enhancing its role as a rotational force as well. As Colonel John Merna, commander of 31st Marine Expeditionary Unit (MEU), put it:

In one sense, the Marines are going back to the force levels we had in the region prior to 9/11. So it is simply a restoration rather than a build up or build out. But the way the force is being configured is very different. We are emphasizing building out a rotational force, notably in Australia, but elsewhere as well.[4]

The Corps is itself "pivoting" in this pivot to the Pacific. Marine forces in Okinawa are moving partly to Guam and shaping a new working relationship with the Australians in Western Australia. In fact, they will be the lead force in reshaping the U.S. presence in the Pacific over the next few years. The Marines face myriad challenges in the Pacific. They have been directed through international agreements spanning two administrations to execute force-positioning moves. This is political, but it is not partisan.

The Secretary of Defense has mandated that at least 22,000 Marines in U.S. Pacific Command remain west of the International Date Line in the distributed Marine Air Ground Task Force Laydown and made it clear that he and Congress and the American people are not interested in a nonfunctional concept for a Marine force. Beyond what is directed, the Marines need to maintain a ready force in the face of existing training area encroachments. They also have that requirement for training areas near the new force laydown locations.

Within the distributed laydown, the Marines must retain the ability to respond rapidly to crises across the range of demands, from major combat operations in Northeast Asia to low-end humanitarian assistance and disaster relief wherever the need arises.

Each location for the Marines is in transition as well. From Okinawa and Iwakuni, the Marines can train locally in Japan, Korea, and the Philippines as well as respond with "fight tonight" capabilities. From Guam, the Marines can train locally in the Commonwealth of the Northern Mariana Islands (CNMI) to the north, the Federated States of Micronesia to the south, and Palau and the Philippines to the west. Guam and CNMI provide the Marines something they do not have elsewhere in the Pacific: a location on U.S. soil where they can train unilaterally or with partners.

The Marine Corps is focused on shaping a distributed operations force to meet these evolving engagement challenges. For such a force, strike is built in but is not the defining quality. For many, augmenting the precision strike force is Washington's key area for investment in the Pacific. But the priority ought to be on building up the capabilities for distributed operations within which precision strike is embedded.[5] As Lieutenant General Terry Robling, commander of Marine Forces Pacific, emphasized:

The key is persistent presence and scalable force. We need to be engaged in the process of reform of the various allied forces as well in the Pacific. We cannot nor should not do it all on our own. And distributed force allows for the kind of security engagement we need to do so, and to be well positioned for escalation if that comes. . . . Distributed operations and disaggregation is a fact of life

in the Pacific. Rarely do we send an ARG [Amphibious Ready Group]*/MEU out now, especially the 31st MEU, into the AOR* [area of responsibility]*, where we don't disaggregate. . . . Until we distribute them to different missions and then re-aggregate to come back to a large exercise or mission, they spread and can cover several missions by distributed operations. . . . And then, with the types of equipment we're buying and we've shown this as well in exercises like Bold Alligator, you can stick a MV-22 on any one of those amphibious ships or any one of those ships, like an MLP* [mobile landing platform] *. . . and you have just extended your shoreline north and south 300 miles each direction.*[6]

Joint terminal air controller communicates with F/A-18 Super Hornet supporting Operation *Spartan Shield* in training to provide U.S. and coalition close air support (U.S. Air Force/Jonathan Snyder)

The Marines are at the forefront of operation innovation and have led with the Osprey, creating new opportunities and potentially new strategies. The commanding general of 1st Marine Air Wing in Okinawa characterized the leveraging of the Osprey to shape possibilities of a new and more effective distributed or island operational strategy:

When you add to that the Osprey and its range and speed, you now have a wider selection of landing spots if we needed an intermediate support base. . . . A good case in point would be [that] *when we wish to deploy helicopters from Futenma* [the Marine Air Base on Okinawa] *to the Philippines, there are a couple of places that we must land for fuel. For one leg, there is only one site, which allows us to do this. But when you have an aircraft with greater range, it opens up more possibilities. . . . If, in a time of conflict, we were going someplace and an adversary wanted to deny us the ability to put in a refueling point or intermediate support base, they would have to now take into account a much greater number of islands. With only helicopters, an adversary could draw a 100-mile ring around a base and know where we could operate. . . . Ospreys, particularly when supported by KC-130Js, would significantly complicate an adversary's attempts to predict our movements and operations.*[7]

The Marines brought the Osprey into operation after a CH-46 was struck by a man-portable air-defense system in 2007. They do not wish to see a similar problem with their legacy aircraft and will seek to bring their F-35Bs, currently training at Yuma Air Station, into the Pacific as early as 2015. With the Marines, evolving the strategy of getting the new equipment to warfighters is crucial to shape that strategy. It is not about testing in the abstract; it is about prevailing in combat, and they believe that getting new equipment into the hands of the warfighter—in this case the F-35B to the Pacific—is a crucial part of the "testing" reality. Former Secretary of the Air Force Michael Wynne underscored the approach: "The current wisdom . . . that testing must conclude before operations can be fully implemented has been turned on its head during the past two decades. But the reality is the opposite. Operational use at crucial points is the real testing of systems."[8]

The Marines are already experimenting with Harriers and Ospreys to anticipate a new potent flexible combination. Osprey refuelers and weapons resupply reloaders with the Harriers as surrogates for the F-35Bs. Deputy Commandant of Aviation, Lieutenant General Robert Schmidle, USMC, has underscored:

We are looking at a sixteen-ship F-35B formation flying with a four-ship Osprey formation. The Ospreys could fly with the Bs to provide fuel and munitions for rearming wherever the F-35Bs can land. As you know, the F-35B can land in a wide variety of areas and as a result this gives us a very mobile strike force to operate throughout the battlespace. This kind of flexibility will be crucial in the years ahead.[9]

An additional advantage to working out a new strategic approach in response to new weapons—in this case the MV-22 and the anticipated arrival of the F-35B—is that the Marines are working with allies to reshape their forces and approaches. Shaping convergent capabilities for future operations is central to a Pacific strategy and will only happen by working the problem at the real-world level. There is no point in playing with yesterday's equipment to reinforce 20th-century concepts of operations; we must leverage the new to shape 21st-century approaches. As Lieutenant General Robling stated regarding the Australians partnering with the Marines, notably in the new working relationship based in Darwin:

They want to have a bigger part in the security of the Pacific because they see themselves as major players here. And the only way that they can be major players with an Army that's only 30,000 strong is to give them the capability to have amphibious forces that can project away from

Australia and make a difference. And the only way they're going to be able to do that is for us to train them up in amphibious operations, buy the equipment they need to load up those amphibious ships that they bought, and then go out and exercise it.

Case 4: Deterring North Korea

For the United States, the deterrence of North Korea is no longer reduced to the defense of South Korea. It is about deterrence of states emerging in the second nuclear age. There is significant global cross-fertilization from the lessons being learned about North Korean behavior and the pressures associated with the possession of a small nuclear force and the ability to gain effects far beyond the position of this force.

The core question is rather simple: how do you deter a nuclear power such as North Korea when it simply will not play by the rules of conventional deterrence? What is the U.S. and allied nuclear and conventional response to the threat of war on the Korean peninsula? Paul Bracken has called this scenario the coming of the second nuclear age. Although his book, *The Second Nuclear Age*, is really about strategy in a world of nuclear proliferation, it is about deterrence in a very different nuclear world than the one shaped by the competition and the rules of the two nuclear superpowers. Bracken has focused on the need to understand escalation and de-escalation in this new nuclear age where the rules have not been established and crises will shape the nature of the rules, not the other way around. As Bracken puts it, "Communication and bargaining, and escalation and de-escalation are at the heart of the use of military force, including nuclear weapons. They are not so unique as to preclude such normal behavior."[10]

The Air Force has struggled to discover its post-Afghan role. Clearly, it can find it by leading the effort to shape a deterrent strategy in the second nuclear age. The prominent thinkers of the first were closely tied to the Air Force and its long period of innovation in the postwar period. We need the same attention once again, and this must include serious debate; it must also focus both on shaping new conventional options and on introducing nuclear warfighting considerations other than countervalue deterrence.

For a thuggish regime such as the one in North Korea, credible leadership decapitation is the only threat, which is as real as a deterrent. This could come via a reshaped conventional capability, a combined conventional and nuclear capability, or a low-yield and precise nuclear capacity. No option should be off the table when debating options and developing capabilities. The Air Force has a unique position in the American forces and can provide solid leadership for this effort.

In part this could be about shaping new options such as deployment of hypersonic cruise missiles with various warheads including electronic warfare warheads. Mark Lewis, the former chief scientist of the Air Force and now head of the Science and Technology Policy Institute at the Institute for Defense Analyses, is one of the leading hypersonic experts in the world. He has underscored that a hypersonic cruise missile is the low-hanging fruit of the hypersonics revolution.[11] In considering the impact of a high-speed missile with evolutions in warheads carried by such missiles, one can see the breakthrough possibilities. The goal would be to marry the missile with warheads that have the ability to get inside the electronics, fire controls, signals, and sensors of opponents flying at hypersonic speeds. With a forward-deployed stealth fleet doing target identification as well as being available to rapidly prosecute combat advantage from the results of the strike, U.S. and allied forces would not only be more lethal but would be a far more effective deterrent force.

Hypersonic cruise missiles are part of the competitive landscape, with China, India, and Russia all investing in these capabilities. U.S. allies such as Australia and France are core players and partners in shaping future capabilities. This is not a race one wants to lose to the Chinese, notably because the rollout of the stealth fleet could make good use of such a capability. Investments clearly need to be made in this area, or, more to the point, they should be pooled to shape an effective outcome.

But this is not only about technology. It is about adapting defense strategies and concepts of operations to provide the space for innovation to occur. Recrafting the U.S. posture in the defense of South Korea would provide a great place to start in shaping Pacific perceptions of the impact of fifth-generation aircraft not only on the air element, but also on the joint force and the coming of distributed operations to the deterrence of North Korea.

Secretary Wynne recently suggested that as the Air Force brings its first squadrons of F-35s into being, it should deploy those aircraft along with F-22s into the defense of South Korea. Then, over a relatively short period, all fourth-generation aircraft would be brought back to the United States. This would focus maximum attention on shaping a different concept of operations for the defense of South Korea. Not only would the area covered by the aircraft become radically different with a variety of vectors whereby the attack and defense enterprise could operate, but reshaping the ground element could be facilitated as well. Secretary Wynne has articulated this strategic opportunity:

This is clearly the theater of highest utility for the emerging F-35 . . . with the F-22 to be the guardian of the Pacific Expanse, and perhaps even used in a partnership with the F-35, and the ROKAF [Republic of Korea Air Force] *forces. . . . This would have the highest probability of training as a "1000 Unit Air Fleet" and the ROKAF, equipped as they are with terrific fourth generation fighters, would yearn to be protected and supportive of this Air Battle Management System proposed and promoted for the F-35. . . . One can as well see in the Korean Theater where in lieu of Aegis, Army systems connected via a C2 system as well can be the wingman for the F-35As/Bs or CV Versions. Service identified targets* [will] *be well within the range of tactical missiles currently fielded and/or well into their design cycle. . . . With the width of the Peninsula inside the range of Naval Missiles, one can see the real need is off-boarding targets and*

serving them appropriately. Real Time Bomb Damage Assessment and even real time Psych warfare may reduce population losses, as all are aware that Regime Loyalty is strongest at the top. . . . Frankly, the operational concepts born in this crucible for combat: the training, the turnaround for weaponeers, training for both a stealth and non-stealth operational elements, and the maintenance construct seem ideal for an early if not the first deployment for this new highly capable fighter. If there remains a belief in peace through strength; this would illustrate it best.[12]

In other words, the Air Force has a real opportunity to show leadership with the North Korean challenge and the South Korean defense effort—not only through studies and briefing slides, but also through introducing new aircraft, reshaping concepts of operations, and working with the Army to reshape how ground-based defense is conducted in such a constricted theater of operation. The distributed operations force reset of the Marine Corps and Navy would be a significant contributor as well because of the diversity of precision strike and missile defense embedded in a sea-based force.

Through the pressure to shape innovation in dealing with South Korean defense and North Korean regional and global deterrence, there is the opportunity to craft what might be called an S-cubed force. Sensors combined with stealth combined with speed can provide a new paradigm for shaping the force necessary for working in the Pacific.[13]

The heart of getting the policy agenda right is understanding that warfare is highly interactive. Buying, building, and deploying yesterday's technologies against evolving threats are sure ways of being on the wrong side of the outcome. In short, innovation can drive change, but only by real-world shifts in concepts of operations through the introduction of new equipment and releveraging older ones in an enhancement of deterrence. Exercises such as the Bold Alligator series, in which the Marine Corps–Navy team led a joint and coalition effort to shape a flexible insertion force, are being used precisely to determine the kind of command and control and intelligence, surveillance, and reconnaissance capabilities that will be needed.[14] The exercise highlighted the core need for the coalition force to be able to craft greater capability to transfer the deconfliction of air tasks to integrated data systems over time. Strike and air deconfliction require significant coordination, and more automation of the data generated will over time assist in the improved flow of force through the deployed ships.[15] As such a force is built, one can determine what kind of nuclear tip it might most effectively be armed with rather than simply being left with a countervalue deterrent structure or a disconnected tactical nuclear option. **JFQ**

Notes

[1] Colonel Bill Buckey, USMC (Ret.), interview with authors, April 2011, available at <www.sldinfo.com/light-attack-aircraft-can-alter-the-course-of-a-war>.

[2] Major General Glenn Walters, USMC, interview with authors, March 2012, available at <www.sldinfo.com/2nd-maw-forward-the-role-of-airpower-in-the-afghan-operation>.

[3] This section is based on interviews with French officers who operated in Mali and in Afghanistan; many were conducted during Murielle Delaporte's embedded reporting from Mali in April 2013. She did the same with French forces in Afghanistan the previous year. Many of the Mali interviews can be found in *Soutien Logistique Défense*, June 2013, available at <www.sldmag.com>.

[4] Colonel John E. Merna, USMC, interview with authors, April 2013, available at <www.sldinfo.com/the-osprey-comes-to-the-pacific-the-case-of-the-31st-meu>.

[5] Robbin F. Laird and Edward T. Timperlake, "Pivot Point: Reshaping U.S. Maritime Strategy to the Pacific," *Jane's Navy International* (April 2013), 22–29; and Robbin Laird, Ed Timperlake, and Richard Weitz, *Rebuilding American Military Power in the Pacific: A 21st Century Strategy* (Praeger Publishers, November 2013, forthcoming).

[6] Lieutenant General Terry Robling, USMC, interview with authors, September 2012, available at <www.sldinfo.com/the-challenge-of-persistent-presence-in-the-pacific-an-interview-with-lt-general-robling>.

[7] Brigadier General Christopher Owens, USMC, interview with authors, December 2012, available at <www.sldinfo.com/shaping-operational-flexibility-an-interview-with-major-general-owens>.

[8] Michael W. Wynne, "The Role of the U.S. Air Force in the Future Fight," *Second Line of Defense*, February 8, 2013, available at <www.sldinfo.com/the-role-of-the-us-air-force-in-the-future-fight>.

[9] Lieutenant General Robert Schmidle, Jr., USMC, interview with authors, March 2013, available at <www.sldinfo.com/the-way-ahead-with-the-f-35b-a-discussion-with-the-deputy-commandant-for-aviation>.

[10] "The Challenge of Deterrence in the Second Nuclear Age: A Discussion with Paul Bracken," *Second Line of Defense*, January 28, 2013, available at <www.sldinfo.com/the-challenge-of-deterrence-in-the-second-nuclear-age-a-discussion-with-paul-bracken>.

[11] Robbin F. Laird and Edward T. Timperlake, "The Coming of the Hypersonic Cruise Missile: A Key Element of S Cubed Evolution," *Second Line of Defense*, April 16, 2013, available at <www.sldinfo.com/the-coming-of-the-hypersonic-cruise-missile-a-key-element-of-s-cubed-evolution>.

[12] Michael W. Wynne, "F-35As to Korea: Shaping a Defense Transition," *Second Line of Defense*, November 22, 2011, available at <www.sldinfo.com/f-35as-to-korea-shaping-a-defense-transition-to-deal-with-real-threats>.

[13] Laird and Timperlake, "The Coming of the Hypersonic Cruise Missile."

[14] "Bold Alligator 2013: Crafting a 21st Century Insertion Force," *Second Line of Defense*, May 8, 2013, available at <www.sldinfo.com/bold-alligator-2013-crafting-a-21st-century-insertion-force>.

[15] "Bold Alligator 2013: Shaping C2 for the Single Naval Battle," *Second Line of Defense*, June 7, 2013, available at <www.sldinfo.com/bold-alligator-2013-shaping-c2-for-the-single-naval-battle>.

Brigadier General Billy Mitchell
(U.S. Army Air Service)

Learning and Adapting

Billy Mitchell in World War I

By Bert Frandsen

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The 2012 Joint Staff *Decade of War* study concluded that U.S. military operations in the first half of the decade were "often marked by numerous missteps and challenges." The second half, however, "featured successful adaptations to overcome these challenges."[1] Reflecting on these conclusions, General Martin Dempsey has emphasized, "We need to put a premium on those who seek and embrace adaptability as an imperative."[2] The Chairman's emphasis on adaptability echoes similar comments made by the well-regarded British military historian Sir Michael Howard, who wrote that the capacity to adapt oneself to the "utterly unpredictable, the entirely unknown" is "an aspect of military science which needs to be studied above all others in the Armed Forces."[3] In this regard, William "Billy" Mitchell's experience in World War I provides an excellent case study in adapting to the unknown. Mitchell played a leading role in helping the American military adapt to an entirely new domain of war—the air.

Sometimes referred to as the father of the U.S. Air Force, Mitchell is one of the most famous and controversial characters in American airpower history. He is the subject of at least six published biographies and numerous articles. He was even the topic of a full-length Hollywood movie titled *The Court-Martial of Billy Mitchell*, starring another iconic American, Gary Cooper.[4] Unfortunately, most of the attention about Mitchell goes to his court-martial and his stormy relationship with the Army and Navy brass. Yet one of the most fascinating aspects of his career was that he was a newcomer to aviation at the outset of World War I. Despite that, he rapidly surpassed more experienced officers and became the Army's senior operational air commander. More than any other American of the time, he mastered the operational art from the airman's perspective, which he exemplified in his leadership during the Saint-Mihiel campaign. How did Mitchell do this? He was a well-educated and gifted officer, but at least as important and often overlooked was his ability

to learn after personal setbacks that ironically worked to his advantage.

A Bitter Rivalry

In 1913, America's future airpower prophet and martyr for an independent air force testified in congressional hearings *against* aviation's independence from the Signal Corps. At this point in his career, Captain Mitchell was one of the rising stars of the Signal Corps, and at age 32 the youngest officer on the Army's new General Staff.[5] Instead of creating aviation as a separate branch of the Army, as proponents of independence hoped, Congress established the Aviation Section of the Signal Corps in 1914.[6] Accordingly, airpower advocates viewed Mitchell as antagonistic to their goals.[7]

Interestingly, a scandal at the Army's flying school in San Diego resulted in Mitchell's transfer from the General Staff in 1916 to the Aviation Section. As historian Juliette A. Hennessy noted, "A basic cause of the trouble was . . . that young flying officers wanted an air organization separate from the Signal Corps."[8] Because of his stellar reputation, Mitchell was selected to temporarily head the Aviation Section after its chief was relieved. Mitchell's job was to restore "old-fashioned military discipline among the so-called prima-donna pilots," opined Benjamin Foulois, one of the leaders of those prima donnas.[9] Later, Mitchell stayed on to become the deputy to the new aviation chief, Lieutenant Colonel George Squier, who returned from Europe where he had been observing aviation developments in the war.

It was during this period that a bitter rivalry developed between Mitchell and the pioneer Army aviator (and prima donna) Benjamin Foulois. Although Mitchell may be America's premier airpower prophet and martyr, Foulois rightly deserves to be called the father of American airpower. He flew with Orville Wright in 1909 on the Army's acceptance tests for its first airplane. He took Army No. 1 to Fort Sam Houston and, as ordered, taught himself to fly it. He helped form the Army's first Provisional Aero Company and commanded 1st Aero Squadron during General John J. Pershing's Punitive Expedition against Pancho Villa. Foulois's command represented America's first employment of airpower on a major expedition. Although the squadron was incapable of adequately accomplishing its reconnaissance mission due to the inferiority of its airplanes, valuable lessons were learned that would be useful when Foulois helped build an American air force for World War I.[10]

Mitchell, from his comfortable perch at aviation headquarters in Washington, DC, harassed Foulois in the Mexican desert during the Punitive Expedition about such details as unauthorized purchases of gasoline. Later, as the United States mobilized for war in Europe, Mitchell's plans for the expansion of the Air Service overlooked establishing bases in the U.S. South and Southwest with their superior weather. Instead he focused on basing in the North and East, which was politically astute but revealed his ignorance on such practical matters as good flying conditions.[11]

Foulois referred to Mitchell's tour of duty in the Aviation Section as "a supreme irony which almost wrecked military aviation in this country."[12] Foulois continued, "Billy must have known that his days were numbered insofar as his usefulness as Squier's deputy was concerned. In March [1917] Mitchell asked for orders detailing him for duty as an observer of military aviation in Europe. As soon as Mitchell left, I was ordered to Washington to take his place."[13]

Mitchell was actually well suited for the job as an official observer because he spoke French, and the assignment provided an ideal stepping-stone to combat command. He toured the front, took detailed notes, and learned about air strategy, tactics, and organization through repetitive visits with the French and British air commanders and their units.[14] Most important, Mitchell's job required him to systematically record, reflect on, and analyze what he saw. "I was a different breed of cat from any of the others they had seen," he wrote in his hotel room at Chalons after visiting French pursuit commander Victor Menard. "Deep into the night they could hear my typewriter clicking as I wrote up my notes."[15]

Mitchell kept up this habit of writing about daily experiences in his journal throughout the war as he moved from one position to another.[16] The modern reader cannot help but be impressed with his observations and analysis. Thus, it was not only being one of the first American aviation officers on the scene, but also his systematic and disciplined approach to learning that helped Mitchell develop a superior understanding of air warfare. By reviewing, writing, and processing his daily observations, he developed the insights that would help him learn the operational art from the airman's perspective. Keeping a journal helped him learn.

The Air Service Expands

As the American Expeditionary Force (AEF) and its Air Service expanded in France during 1917, officers moved from position to position, as did Mitchell. He quickly advanced to colonel, becoming the air commander of the Zone of Advance. During this period, however, Mitchell commanded no aviation units because none had yet arrived in the Zone of Advance. He functioned mainly as a planner, all the while anticipating, studying, and laying the groundwork for the future employment of American airpower.[17]

The main effort for the Air Service at this time was not Mitchell's responsibility but rather that of his counterpart, Colonel Raynal Bolling, who commanded the Zone of the Interior and focused on the larger job of aircraft procurement, training, and reception of deploying units that were beginning to arrive in France. Pershing had decided to conduct the final organization, training, and equipping of the Air Service in France because the Americans were so far behind the Europeans in military aviation. It was a key strategic decision perfectly suited to the strategy of the French and British, who needed to build American partnership capacity to help them win the war.

This so-called Dual Monarchy of Bolling and Mitchell ended with the

General Mitchell standing by Vought VE-7 Bluebird (U.S. Air Force)

arrival of Benjamin Foulois in November 1917.[18] Foulois was the obvious choice to lead the Air Service because of his command of 1st Aero Squadron on Pershing's Punitive Expedition. He had quickly advanced from major to brigadier general back in Washington where he had finished laying the groundwork for the mobilization of American airpower.

Foulois brought his own staff and reassigned both Bolling and Mitchell to new jobs, removing them from key positions in the headquarters and replacing them with officers who had accompanied him across the Atlantic. Mitchell was greatly embittered with this treatment: "A more incompetent lot of air warriors had never arrived in the zone of active military operations since the war began. . . . The competent men, who had learned their duties in the face of the enemy, were displaced and their positions taken by these carpetbaggers."[19]

Foulois's dismissal of Bolling and Mitchell was a colossal error. The veteran from the Punitive Expedition failed to transition from tactical to senior leadership, where building consensus with other senior leaders and peers is so important. In effect, his reassignment of Mitchell and Bolling decapitated the Air Service at a time when recently acquired institutional knowledge was more important than ever. The growth rate of the Air Service was just then rapidly accelerating as the effect of American mobilization began to make itself felt.

Foulois assigned Mitchell to be the chief of Air Service, I Corps.[20] Though a personal setback, this "demotion" removed Mitchell just as a tsunami of administrative and logistical issues arrived at the doorstep of his successor. American aero squadrons were beginning to reach the Zone of Advance at various organization and training centers (pursuit, bombardment, observation), where they received their aircraft and equipment and were made combat ready before being assigned to the front.[21] In contrast, when Mitchell arrived at the recently organized I Corps headquarters, it did not yet have operational control of any American combat units. As before, he did not command much of anything. He joined a headquarters whose staff was itself undergoing organization and training.

Like the other members of the staff, Mitchell conducted a study of his area of responsibility undistracted by the daily grind of command. This time he focused on the enemy: the organization, aircraft, and operations of the German air force.[22] Thus, by the spring of 1918, Mitchell had spent a year in France, developed plans for the tactical organization of the Air Service, and conducted in-depth studies of both the friendly and opposing air forces. He knew more about these subjects than any other senior American officer.

Subsequently, the first observation and pursuit squadrons arrived in the I Corps area, known as the Toul sector. This was a quiet part of the front where American units gained initial combat experience under the control of the French Eighth Army. It was a peculiar command arrangement that provided Mitchell with maximum flexibility. He was not responsible for the orchestration of flying operations, nor did he issue daily operations orders because the French army performed this function, but he did have administrative jurisdiction. Captain Philip Roosevelt, the operations officer of 1st Pursuit Group, wrote, "God knows what his authority was, but as usual we decided that if it came to a question of getting along . . . we would do all the getting along."[23] These early operations provided Mitchell the opportunity to begin taking the measure of his men and machines in their first combats.

Mitchell also polished his flying skills. He arrived in France without the wings of an aviator, but the limited responsibilities of successive jobs enabled him to build on the flying lessons he began in the States. By then he had become an accomplished pilot, even learning to fly America's first fighter, the French-made Nieuport 28, which was a difficult plane to handle because of the gyroscopic effect created by its rotary engine. In May 1918 he led a six-plane exhibition flight of 94th Aero Squadron's Nieuport 28s during an awards ceremony in which the commanding general of the French Eighth Army presented the *Croix de guerre* to several officers of the 94th, including Eddie Rickenbacker, in recognition of their first victories against the Germans.[24]

In contrast, many of the experienced prewar Army aviators, such as Foulois and Colonel Robert Van Horn, who had replaced Mitchell as commander of the Zone of Advance, were so overwhelmed with the workload of building the Air Service that they simply could not devote time to learning to fly the latest combat aircraft. They could never lead by example as Mitchell did.

While at Toul, Mitchell anticipated the establishment of an Army headquarters that would be needed to control multiple corps as American doughboys poured into France. He established a provisional air headquarters for First Army. As happened before to Mitchell in the Zone of Advance, however, he was removed from this position just as First Army was nearing activation.

The deteriorating state of affairs in the Air Service, exacerbated by the earlier decapitation of its senior leadership, resulted in Pershing dismissing Foulois. His replacement, engineer officer Major General Mason Patrick, remembered Pershing describing the Foulois regime as "good men running around in circles."[25] As the dominoes fell, Foulois arrived at the provisional air headquarters for First Army and told Mitchell, "There's no use beating around the bush, Billy, I'm here to take over your office, your files, and your job. You are relieved as of this moment."[26]

More than mortified, this time Mitchell was insubordinate. In response to Foulois's request to stay on a few days to help with transition, Mitchell responded, "Not on your life, General. . . . [Y]ou couldn't possibly acquire the knowledge to run this office in a few days and I'll be damned if I'm going to make it easy for you."[27] He refused to hand over officer furniture, maps, and even the telephone. It was a low point for Mitchell. Word spread throughout the upper echelons of the AEF that he was not a team player. Foulois asked Pershing to send Mitchell back to the United States, but Pershing instead counseled Mitchell and required Foulois to make the best of it.

Yet again this setback would ironically provide Mitchell the opportunity to further his study of air warfare, gain experience in a major coalition air operation, and surpass Foulois as the most important American air leader to emerge from World War I. By the end of May, Germany's last great offensive, launched in March, had reached Château-Thierry only 40 miles from Paris. The resulting panic led to the piecemeal commitment of Soldiers and Marines to reinforce Sixth French Army, which was reeling back from the German onslaught. The Marines fought one of their most famous battles at Belleau Wood, and the Army's 3rd Infantry Division won the moniker "Rock of the Marne" for its stalwart defense along that river.

After observing these initial battles, one of Pershing's scouts sent a strongly worded report back to AEF headquarters: "I recommend that an observation and a pursuit squadron of aero planes be sent here to work with this division at [the] first opportunity. The Germans have control of the air and embarrass our movements and dispositions."[28] Consequently, Pershing ordered American aviation to the Marne sector along with the 1st Corps headquarters, which provided overall command for additional American units reinforcing the French.

Despite their previous falling out (but also getting Mitchell away from the First Army sector), Foulois put Mitchell in command of 1st Air Brigade, a new organization created to accompany U.S. reinforcements to the beleaguered Sixth French Army. Mitchell's command consisted of 1st Pursuit Group and 1st Observation Group. Again, the lines of authority were unclear. First Pursuit Group received its operations orders from the chief of the Air Service of Sixth Army, which was in overall command of the sector. That was logical because the American Pursuit Group replaced Sixth Army's former Pursuit Group, which had been practically shot out of the sky. First Observation Group, which directly supported 1st Corps with reconnaissance and artillery adjustment, took its orders from the corps.[29]

These unclear command relationships created a difficult conundrum for Mitchell's subordinates, who sometimes received orders from multiple headquarters. Roosevelt explained, "I had to spend a lot of time seeming to obey their orders while really making my own dispositions. . . . All our orders really came from the French—which [Mitchell] approved."[30] To be sure, the Army was still working out the nuances of command relationships between the pursuit and observation groups and the armies and corps they supported. This was made all the more difficult while fighting under French command. Today, we would call Mitchell a COMAFFOR (commander of Air Force forces) who had OPCON (operational control) of U.S. 1st Pursuit and 1st Observation groups. He was supporting a French CFACC (combined force air component commander) who had TACON (tactical control) of the U.S. air forces of 1st Air Brigade. But these sorts of command relationships had not yet been created.[31]

Nevertheless, Mitchell's presence enabled him to organize a tactical headquarters, which he located adjacent to the air headquarters of Sixth French Army just as it was preparing to conduct the largest combined air operation of the war up to that time. The Marne campaign served as his postgraduate education in aerial warfare.

The Initiative Shifts

Anticipating a renewal of the German offensive, Allied Commander in Chief General Ferdinand Foch assembled a large air force as a strategic reserve. It consisted of the French Air Division, the Royal Air Force 9th Brigade, and U.S. 1st Pursuit Group. The French Air Division was the largest single aviation unit of the war. Its two brigades represented some 370 fighters and 230 bombers. Ninth Brigade provided an additional nine squadrons of offensive airpower. Added to that were the four squadrons of 1st Pursuit Group.

With his brigade headquarters collocated with the French Sixth Army air headquarters, Mitchell learned how to integrate multinational airpower in a large operation. Once the battle began on July 15, 1918, the combined forces established air superiority and attacked German crossing sites along the Marne. This operation helped defeat the German army in the most decisive battle of the war, known as the Second Battle of the Marne. After that, the Allies seized the initiative and never lost it. Germany would be defeated a few months later.

Meanwhile, Pershing finally activated First Army and was preparing for the

German Hannover CL IIIa brought down in Argonne by American machinegunners on October 4, 1918 (U.S. Army/NARA/J.E. Gibbon)

Saint-Mihiel offensive. The stakes were high because the United States had yet to demonstrate the ability to campaign on the European battlefield. Realizing that Mitchell was his best and most experienced air commander, Pershing returned him to the position of chief of Air Service of First Army, replacing Foulois who, to his credit, supported the decision and took a new job that focused on training and logistics.

First Army's mission was to reduce the Saint-Mihiel salient, a large bulge in Allied lines that had existed since the early days of the war. Foch was eager for Pershing to finish this attack quickly because he wanted the Americans to concentrate their main effort in the Meuse-Argonne sector, joining the French and British for the final offensives. Accordingly, he reinforced Pershing with troops and enablers, especially artillery and aviation.

The French, British, and even Italians provided air units to reinforce the American Air Service's 28 squadrons. The total force numbered 701 pursuit planes, 366 observation planes, 323 day bombers, and 91 night bombers adding up to 1,481 aircraft for the largest air operation of the war.[32] In contrast to the Allied defensive battle on the Marne, Mitchell's plan supported an offensive operation and therefore took an entirely different approach. While American combat aviation operated within 3 miles of the front, Mitchell ordered the French Air Division to attack 12 to 20 miles behind enemy lines. By pressing the attack, he kept his enemy off balance and on the defensive, unable to interfere with the First Army offensive.[33]

Saint-Mihiel occupies a special place in airpower history not only because it was the largest single air operation of the war. The concentration of coalition air forces did its part in helping Pershing to wipe out the salient and achieve a successful inauguration of American arms in continental warfare. Mitchell's example provided a vision for unity of command that would inspire airmen long after he passed from the scene. His continued command for the upcoming Meuse-Argonne offensive was a foregone conclusion. Just prior to the end of the war, Pershing made Mitchell chief of the Air Service for an Army group that would command First and Second U.S. Armies.[34]

Conclusion

Billy Mitchell's experience in World War I is an ironic story of learning and adapting. Each setback he experienced could have been, and probably was, perceived as a failure. He commanded the Zone of Advance but was removed from that prestigious position just as it was becoming active. Although bitter about his relief, he showed initiative in establishing the office of the provisional air chief of First Army. Removed yet again, one sees this tendency for him to be "demoted" to positions where his authority and responsibility were reduced. The irony is that without these setbacks, he would not have had such ideal opportunities to learn. By the time the AEF was ready to conduct its first major offensive, even Foulois, who had asked Pershing to send Mitchell back to the States, admitted that Mitchell was the best man to command air operations in the AEF's final offensives.

Did Mitchell see it so optimistically at the time? His memoir suggests he was filled with resentment in each instance. He may have even feared he had been sidelined permanently. But as we have seen, setbacks can be learning opportunities. Indeed, it is the point of Tim Hartford's recent book *Adapt: Why Success Always Starts with Failure*.[35] In spite of setbacks, Mitchell persisted with an intensity that was undergirded by the self-confidence born of an inner light. He derived this *coup d'oeil* by developing a degree of competence in aerial warfare that far exceeded his American peers. His study of this new type of warfare was supercharged by the fact that throughout the war, whatever his position, he regularly made time to systematically process his experience by writing down his daily observations and analyzing what they meant. This practice helped him gain understanding.

One of the ironies of life is that setbacks can have silver linings, but to exploit this irony, we must learn, adapt, and more often than not persist in the face of adversity. Not everyone succeeds. To borrow from Carl von Clausewitz, the chaos and uncertainty that characterized the AEF's Air Service provided the environment for Mitchell's creative and adaptive spirit to soar. Through a combination of persistence and a systematic approach to learning, Billy Mitchell adapted and learned the operational art from the airman's perspective. **JFQ**

Notes

[1] Joint and Coalition Operational Analysis Division, *Decade of War*, *Volume 1: Enduring Lessons from the Past Decade of Operations* (Suffolk, VA: The Joint Staff, June 15, 2012), 1.

[2] Martin E. Dempsey, "Building Tomorrow's Leaders," *Joint Force Quarterly* 67 (4th Quarter 2012), 2.

[3] Michael Howard, "Military Science in the Age of Peace," *RUSI Journal* 119 (March, 1974), 7.

[4] Phillip S. Meilinger, *American Air Power Biography: A Survey of the Field* (Maxwell Air Force Base, AL: Air University Press, 1995). Biographies include Paul H. Jeffers, *Billy Mitchell: The Life, Times, and Battles of America's Prophet of Air Power* (St. Paul, MN: Zenith Press, 2005); Roger G. Miller, *Billy Mitchell: Stormy Petrel of the Air* (Washington, DC: Office of Air Force History, 2004); James J. Cooke, *Billy Mitchell* (Boulder, CO: Lynne Rienner Publishers, 2002); Roger Burlingame, *General Billy Mitchell: Champion of Air Defense* (Westport, CT: Greenwood Press, 1978); Alfred F. Hurley, *Billy Mitchell: Crusader for Air Power* (Bloomington: Indiana University Press, 1975); Emile H. Gauvreau and Lester Cohen, *Billy Mitchell*: *Founder of Air Force and Prophet without Honor* (New York: E.P. Dutton, 1942). Otto Preminger directed the film *The Court-Martial of Billy Mitchell*, released in 1955.

[5] Mark A. Clodfelter, "Molding Airpower Convictions: Development and Legacy of William Mitchell's Strategic Thought," in *The Paths of Heaven: The Evolution of Airpower Theory*," ed. Phillip S. Meilinger, 82 (Maxwell Air Force Base, AL: Air University Press, 1997).

[6] Alfred F. Hurley and William C. Heimdahl, "The Roots of U.S. Military Aviation," in *Winged Shield, Winged Sword: A History of the United States Air Force*, ed. Bernard C. Nalty, I-28 (Washington, DC: Air Force History and Museums Program, 1997).

[7] Cooke, 50.

[8] Juliette A. Hennessy, *The United States Army Air Arm: April 1861 to April 1917* (Washington, DC: Office of Air Force History, 1985), 145.

[9] Benjamin Foulois with Colonel C.V. Glines, *From the Wright Brothers to the Astronauts: The Memoirs of Major General Benjamin D. Foulois* (New York: McGraw-Hill, 1968), 125.

[10] Ibid., 60–65, 70, 87; Hennessy, 175.

[11] Foulois, 139, 141.

[12] Ibid., 125.

[13] Ibid., 141.

[14] Cooke, 51.

[15] William Mitchell, *Memoirs of World War I: From Start to Finish of Our Greatest War* (New York: Random House, 1928), 26.

[16] Mitchell's published memoir "probably represents the diary to a remarkable degree." Ibid., vi.

[17] Bert Frandsen, *Hat in the Ring: The Birth of American Air Power in the Great War* (Washington, DC: Smithsonian Books, 2003), 86.

[18] Bolling and Mitchell were loosely supervised for a few months by non-flyer Brigadier General William Kenley.

[19] Mitchell, 165–166.

[20] Ibid., 178.

[21] The Air Expeditionary Force Air Service established organization and training centers where pursuit, observation, bombardment, and balloon squadrons and groups were formed and made combat ready before being assigned to the Front. See Frandsen, 8.

[22] Mitchell, 179.

[23] Philip Roosevelt was a favorite cousin of President Theodore Roosevelt and an ardent supporter of the President's "Preparedness Movement" for the war in Europe. See Philip J. Roosevelt to Captain [Arthur R.] Brooks, February 14, 1921, U.S. Air Force Historical Research Center, Maxwell Air Force Base, AL, file GP-HI (FTR), 5–6.

[24] Ninety-fourth Aero Squadron Alert Log, National Air and Space Museum Archives, file 1247, 216.

[25] Mason Patrick, *The United States in the Air* (New York: Doubleday, Doran and Co., 1928), 16.

[26] Foulois, 172.

[27] Ibid.

[28] Col. Walter S. Grant to [Col. Fox] Connor, June 15, 1918, in *United States Army in the World War* (Washington, DC: U.S. Army Center of Military History, 1988), IV-490.

[29] Frandsen, 150.

[30] Roosevelt to Father, July 8, 1918, Philip J. Roosevelt papers, family collection of Philip J. Roosevelt II, Chappaqua, New York.

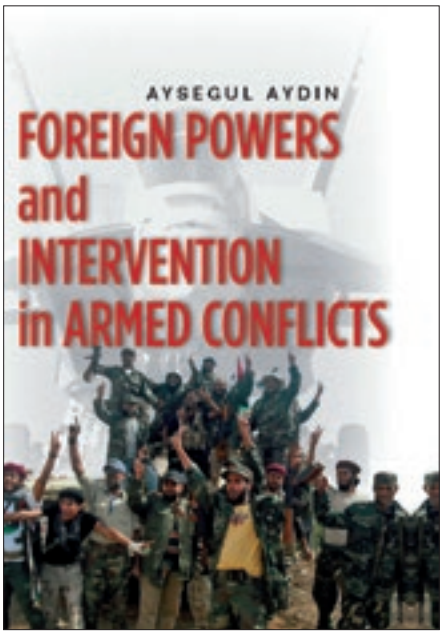
[31] Thanks to Lieutenant Colonel Jim Burlingame, USAF (Ret.), for clarification on this point; Joint Publication 3-30, *Command and Control for Joint Operations* (Washington, DC: The Joint Staff, January 12, 2010), chapter 3; Air Force Doctrine Document 1, *Air Force Basic Doctrine* (Washington, DC: Headquarters Department of the Air Force, October 14, 2011), 105.

[32] Patrick, 27.

[33] First Army Air Service, Operations Order 1, September 11, 1918, in *United States Army in the World War*, VIII-216.

[34] Cooke, 100.

[35] Tim Hartford, *Adapt: Why Success Always Starts with Failure* (New York: Farrar, Straus and Giroux, 2011).



Foreign Powers and Intervention in Armed Conflicts

By Aysegul Aydin
Stanford University Press, 2012
202 pp. $45
ISBN: 978-0-8047-8281-4

Reviewed by
David A. Anderson

Aysegul Aydin, an academic scholar, sets out to determine why and through what means external states choose to get involved in interstate conflicts and civil wars. He asserts that intervening states make their choices based on a combination of security and economic interests. His challenge is significant since the related literature (that is, international relations, international political economics, and security studies) has evolved somewhat independently. Aydin's investigation is rooted in realist and liberalist international relations theory. He uses empirical data from hundreds of external conflicts and 153 civil wars from 1944 to 2001. For contextual purposes, he also brings both preconflict and postconflict intervention measures to bear, coupled with literature addressing conflict prevention and postconflict reconstruction. His statistical analysis is complemented by qualitative analysis of numerous country case studies providing a uniquely comprehensive historical perspective on international intervention through various political and international institutional means (for example, diplomatic, military, and economic).

The author's research shows compelling proof that America and other states primarily intervene in conflicts and civil wars based on economic and national security interests. For example, his statistical analysis strongly points to intervention as a way to protect foreign direct investment and trade. Keeping land and sea lines open for trade was also identified as an imperative, one that allows other states to residually benefit. His examination also demonstrates that intervention is undertaken to circumvent potential adversaries from posing security concerns in given regions. Particularly noteworthy is that Washington has generally aligned with those states presenting the least threat to the Nation and its regional allies.

Frankly, none of the results of Aydin's analysis are necessarily profound or surprising. What they do provide, however, within a uniquely comprehensive framework, is empirical evidence linking anecdotal, independent, and often disconnected historical accounts of conflicts over the past 70 years. This empirical analysis allows collective patterns of external states' and institutional actors' actions and behaviors to emerge that otherwise would have gone statistically unproven or undiscovered. This alone makes a significant contribution to this body of scholarly literature.

More specific outcomes of this author's work include reinforcing the notion that neither liberalist nor realist theory alone can account for why nations get involved in international conflicts. Diplomacy was identified as the preferred form of statecraft used by external state actors for intervening in civil wars. The military instrument of national power was shown to be the favored option of external intervening states for international conflicts normally small in scale and short in duration. States strongly tied to the belligerents can be readily counterbalanced by a powerful opponent in the conflict, thus diminishing the value of the use of force as an option. Democratic states support democratic states even when a democratic state is the first to employ its military in a conflict. Finally, external state actors do not get involved in conflicts to necessarily "save weak states" or "oppose those who seek to alter the world order." Again, this suggests that states intervene in armed conflicts primarily out of their own national security interests, increasingly tied to the growth of economic liberalism and the economic interdependence it creates among states.

Although the scholarly rigor of Aydin's research is laudable, there are shortcomings. The book reads too much like a doctoral dissertation, making it stylistically difficult to digest. He did not tie some of the literature cited to the main thesis. Furthermore, the book is short relative to the complex and volumeous nature of the subject matter. Finally, the excellent choice of country cases was undermined (including the chapter focused on contemporary U.S. interventions) by somewhat hollow/shallow qualitative analysis.

The book is best read by political science, international relations, international political economic, and security studies scholars. It may also be of interest to military historians, foreign policy designers, and those generally interested in why and how states get involved in the armed conflicts of others. **JFQ**

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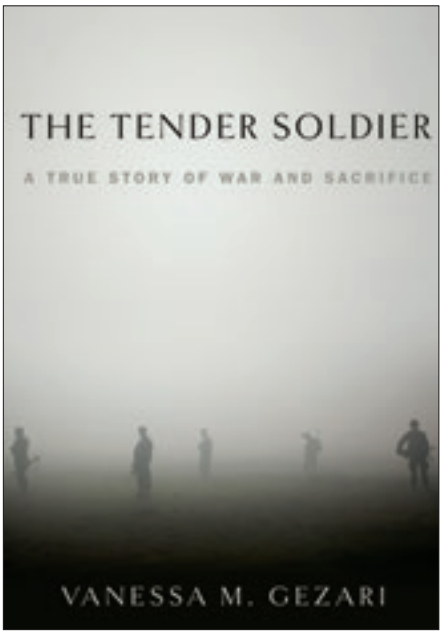


The Tender Soldier: A True Story of War and Sacrifice

By Vanessa M. Gezari
Simon & Schuster, 2013
347 pp. $25
ISBN: 978-1-4391-7739-6

Reviewed by
Michael C. Davies

On November 4, 2008, Paula Loyd, a social scientist with a relatively new U.S. Army program, the Human Terrain System (HTS) and its deployed Human Terrain Teams, was on task in Maiwand, Afghanistan. Deployed to study the sociocultural nuances of the Afghan people and help commanders better understand the host population, this day would lead to Loyd's death. *The Tender Soldier: A True Story of War and Sacrifice*, by journalist and Columbia University Graduate School of Journalism Professor Vanessa M. Gezari, is a well-researched and deeply personal narrative of the events of that day and the controversies surrounding the program that deployed Loyd into the field.

HTS has been a controversial topic from its earliest days. The notion of deploying civilian Ph.D.s and M.A.s into Iraq and Afghanistan to engage in combat ethnography in direct support of U.S. military units was anathema to many in academia, the military, and the media. These are the topics, controversies, and debates that Gezari traces as the story of Loyd develops.

Gezari describes in great and often uncomfortable detail that fateful November day. Loyd was interviewing an Afghan man, Abdul Salam. After many minutes of questions, Salam poured a can of cooking oil on Loyd and set her on fire. Salam was quickly executed by one of Loyd's teammates, Don Ayala. Loyd would die from complications in a hospital 2 months later. Even though the program had lost two other members that same year, Michael Bhatia and Nicole Suveges, this would be its darkest day. For the reader, it can be a genuine struggle to read Gezari's account as she intimately describes what happened through the eyes of Loyd's teammate, Clint Cooper, who held Loyd's hand in the aftermath, and many others present at the time. The horrifying sights, sounds, and smells are imbued on the page. It is a testament to Gezari's writing to be able to achieve such realism.

The narrative style of *The Tender Soldier* weaves through the past and then-present by combining an individual's biography with the larger issue of the program. The story of HTS's iconoclastic managers, Colonel Steve Fondacaro and Dr. Montgomery McFate, interlock with the history of deinstitutionalization and reengagement with sociocultural knowledge within the U.S. military, and the response of the American Anthropology Association to the program (chapter 2 and 5, respectively). The biography of Ayala and Cooper is explained alongside the history of Maiwand (chapter 4). This effective device helps ensure the personal content is understood in relation to the issues inherent to the war and HTS as topics and time both shift.

Perhaps one of the most surprising aspects of Gezari's book is her biography of Salam himself. In traveling to Afghanistan, Gezari has added an additional layer of description and explanation others would negate. In interviewing family members and local villagers about the incident, and the possible reasons for the attack—which ranged from Taliban bribery, Taliban extortion, mental instability, and extremist sympathies—the reader is offered a full panoply of issues to consider. Sadly, with Salam long dead, the truth will never be known or understood.

What certainly makes the book valuable is the nearly 100 pages of discursive notes. For a program that has been treated to uncritical promotion and overly negative condemnation, these notes add authentic evidence to the debate. This is a particular problem for the critics of HTS within the anthropology discipline who have (without irony) offered ferocious and vitriolic commentary devoid of genuine research and primary sources while simultaneously declaring the program guilty of unethical behavior.

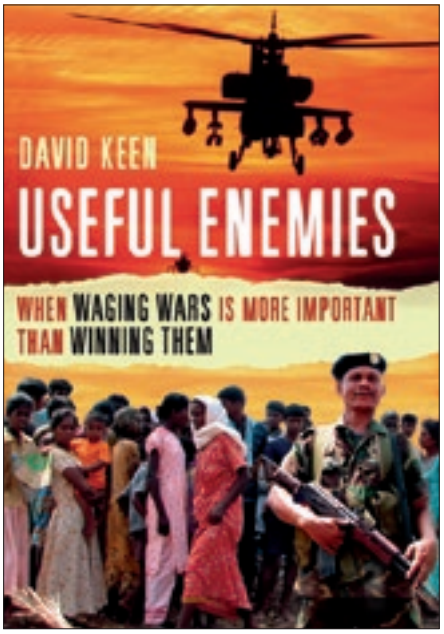
The comprehensiveness of Gezari's account can have some odd side effects, however. She engages with a number of detailed issues about the program, such the contested genesis story of HTS, which has been "embellished by ambitious and therefore potentially unreliable narrators who nevertheless, each holds a piece of the story" (pp. 23–24). She also discusses the atypical biography of McFate and accusations relating to corporate espionage (p. 118). Yet a final answer on these issues is not stated. The reader is left to ponder which declaration is correct. This may have been intentional in noting the relative claims of competing individuals, but it can be disconcerting in one's search for the final answer.

Additionally, because of the highly focused and personal narrative style, the reader is left with the impression that every team beyond Loyd's was incompetent. The other teams in Afghanistan mentioned are primarily negative examples. Gezari's story, and therefore the reader, is blind to the actions of others deployed. This is not to deny that the actions described (pp. 162, 182–185) are proof of incompetence, merely that they are the actions of a few people among many hundreds who have gone into two theaters, operated with a range of units, and even operated

independently with special operations forces, all in a variety of circumstances.

But these are minor quibbles. The story of November 4, 2008, is a terrible one, but it has been told masterfully. As former HTS Program Manager Colonel Sharon Hamilton previously stated, "The HTS story is one of challenges, rewards, stumbles, and successes." In a program often overwhelmed with polemical accusations, Gezari's work stands out as sober, rigorous, and appreciated. *The Tender Soldier* is therefore a welcome addition to the literature on the Decade of War. **JFQ**

Michael C. Davies is one of the coauthors of *Human Terrain Teams: An Organizational Innovation for Sociocultural Knowledge in Irregular Warfare* (Institute of World Politics, 2013).



Useful Enemies: When Waging Wars Is More Important Than Winning Them

By David Keen
Yale University Press, 2012
311 pp. $38
ISBN 978-0-300-16274-5

Reviewed by
William A. Taylor

In *Useful Enemies*, David Keen (professor of conflict studies at the London School of Economics) explores both the causes of conflict and the varied factors that perpetuate war. Military leaders, policymakers, analysts, scholars, and general readers interested in the complex dynamics of warfare should find the work engaging. Keen's thesis is controversial: "This book suggests that a great many wars are resistant to ending for the simple (but hidden) reason that powerful actors (both local and international) *do not want* them to end. . . . Very often, powerful actors may simply pursue other priorities that conflict with the expressed goal of winning (actions that may have the *effect* of reproducing the enemy, or that may simply take time, energy and resources away from 'winning')" (pp. 8–9).

Keen implores readers to consider why many contemporary conflicts last so long, especially given that often one side holds a significant military advantage. His answer is that winning wars in the military sense frequently takes a secondary priority to simply waging them for economic, political, or even psychological reasons. As Keen argues, "I want to stress that winning is only *one part* of war (and sometimes a surprisingly small part)" (p. 10). To make his case, Keen explores the underlying causes of conflict in such diverse places as Sierra Leone, the Democratic Republic of the Congo, Sudan, Uganda, Angola, Sri Lanka, Guatemala, and Colombia. He utilizes evidence from his own wide-ranging travels including personal interviews with participants, journalists, aid workers, and human rights advocates. He also delves deeply into nongovernmental organization reports and scholarly works.

Keen organizes his book into nine chapters that collectively explore three alternative motivations for conflict other than the conventional explanation of winning wars militarily. First (chapters 1–4 and 8), he focuses on economics by exploring the role of diamonds in Sierra Leone, oil in Sudan, gold and coltan in the Democratic Republic of the Congo, cocaine in Colombia, and the existence of "ghost soldiers" (p. 28) in Uganda whose pay was syphoned off by profiteering officers. Economically, he also examines the impact of international aid on conflict. Keen argues that in Afghanistan "it is very hard to channel large amounts of aid through corrupt and abusive regimes without reinforcing corruption and abuse" (p. 69) and thus prolonging war. Keen develops the intriguing concept of "international blind spots," maintaining that "This 'statist' bias has been reflected in a much greater willingness, generally, to sanction abusive rebel movements than abusive governments" (p. 44).

Second (chapters 5–7), Keen examines politics as a cause of conflict. Countering common depictions of contemporary hostilities that focus solely on "ethnic hatreds," he develops the useful concept of "political adaptation" that occurred in the former Yugoslavia when communism gave way to nationalism based on ethnicity as the currency of local politics (p. 103). He provides similar insights into the political (as opposed to solely ethnic) dimensions of the complexities of genocide in both Darfur and Rwanda. Keen perceptively reminds readers that policymakers often manipulate conflict for political purposes. As he contends, "Discovering the most important fault-lines in any particular conflict is made more difficult by the fact that a misreading is often *intended*. For example, the manipulation of ethnic divisions by elite groups will 'work' better when people see—and are encouraged to see—ethnic fault-lines as natural and inevitable" (p. 115).

Third (chapter 9), Keen explores psychological motivations for starting and perpetuating conflict, especially the role of shame. As Keen explains, "Crucially, the avoidance of shame—and conversely the pursuit of respect—represents another important goal that departs from the commonly assumed aim of 'winning'" (p. 195). Keen connects this important factor to relative deprivation: "Significantly, it is not necessarily poverty that causes shame, but the interaction of poverty and wealth, the juxtaposition of 'underdevelopment' and a development

effort that somehow manages to exclude huge sections of society" (p. 201). Shame then contributes to a cycle of violence where depredations to one side often demand retribution against the other side.

Useful Enemies is an enjoyable read that is global in scope. Keen contributes useful concepts, such as the role of "wars within wars" (p. 117) and "war systems" (p. 236). The first concept places local conflicts within broader wars and explains how this dynamic further fuels hostilities. Examples include combatants waging local conflict within broader civil wars and adversaries fighting national battles under the mantle of global wars such as the Cold War or the war on terror. The second concept illuminates the multifaceted nature of violence and therefore warfare. Conflict is not solely defined by its military dimension, but also by its economic, political, and psychological aspects. When analyzed in combination, conquering the enemy becomes a less exclusive explanation for the existence and duration of many contemporary conflicts. In the end, Keen asks a fundamental and sometimes uncomfortable question: "What ends are served by endless war?" (p. 175). In *Useful Enemies*, he provides many of the most compelling answers. **JFQ**

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Joint Publications (JPs) Under Revision (to be signed within 6 months)

JP 2-01.3, *Joint Intelligence Preparation of the Operational Environment*

JP 3-02, *Amphibious Operations*

JP 3-02.1, *Amphibious Embarkation and Debarkation*

JP 3-05, *Special Operations*

JP 3-07.2, *Antiterrorism*

JP 3-09.3, *Close Air Support*

JP 3-26, *Counterterrorism*

JP 3-29, *Foreign Humanitarian Assistance*

JP 3-30, *Command and Control for Joint Air Operations*

JP 3-31, *Command and Control for Joint Land Operations*

JP 3-52, *Joint Airspace Control*

JP 3-63, *Detainee Operations*

JP 4-05, *Joint Mobilization Planning*

JP 4-09, *Distribution Operations*

JP 4-10, *Operational Contract Support*

JPs Revised (signed within last 6 months)

JP 1-05, *Religious Affairs in Joint Operations* (20 Nov 13)

JP 2-0, *Joint Intelligence* (22 Oct 13)

JP 3-06, *Joint Urban Operations* (20 Nov 13)

JP 3-07.4, *Counterdrug Operations* (14 Aug 13)

JP 3-11, *Operations in Chemical, Biological, Radiological, and Nuclear Environments* (4 Oct 13)

JP 3-16, *Multinational Operations* (16 Jul 13)

JP 3-17, *Air Mobility Operations* (30 Sep 13)

JP 3-24, *Counterinsurgency* (22 Oct 13)

JP 3-27, *Homeland Defense* (29 Jul 13)

JP 3-28, *Defense Support of Civil Authorities* (31 Jul 13)

JP 3-32, *Command and Control for Joint Maritime Operations* (7 Aug 13)

JP 3-57, *Civil-Military Operations* (11 Sep 13)

JP 4-0, *Joint Logistics* (16 Oct 13)

Security Cooperation
How It All Fits

By Taylor P. White

Department of Defense (DOD) security cooperation activities support or are combined with other assistance programs and often are a part of nation assistance. This often occurs in a manner that may appear confusing or convoluted to the joint warfighter. This article portrays how the programs and activities converge. Although the various terms and activities in show in the accompanying figure appear to have simple names and meanings, they in fact have strict definitions based on funding and authorities. While some of the activities directly support one another, others have distinct boundaries between their definitions and functions. The joint community is beginning to address the framework of security cooperation in a new joint doctrine publication, Joint Publication (JP) 3-XX, *Security Cooperation*. It is important to embark with clear definitions and understanding of the complex relationship among these terms to facilitate understanding by the joint force.

Security cooperation is referred to in both joint professional military education programs and joint staffs as a tool to be employed by combatant commands. However, in other settings, it is a set of programs managed by the Defense Security Cooperation Agency. Extensive review of joint doctrine and policy reveals that the definition of *security cooperation* appears to encompass these areas and more. After expanding our understanding of security cooperation, other terms such as *security force assistance*, *foreign internal defense*, and *security assistance* provide additional specificity for the tasks being conducted, yet some of these actions fall outside security cooperation. Even though security cooperation spans the range of military operations and is inclusive of large-scale operations conducted in support of foreign nations, it is not all-encompassing of security related support from U.S. agencies other than DOD.

Nation assistance is support rendered by foreign forces within another nation's territory based on mutual agreements.[1] While this term is used to describe the comprehensive approach to assisting other nations, the definition associated with *nation assistance* has two limitations: it does not encompass support to regional organizations, and it is only assistance by foreign forces. A better, broader term is *foreign assistance*, which is assistance to foreign nations ranging from the sale of military equipment to donations of food and medical supplies to aid survivors of natural and manmade disasters.[2] When examining the current definitions for *foreign assistance* and *nation assistance*, we find significant overlap:

Foreign assistance to foreign nations [ranges] *from the sale of military equipment to donations of food and medical supplies to aid survivors of natural and man-made disasters. U.S. foreign assistance takes three forms: development assistance, humanitarian assistance, and security assistance.*[3]

This term is likely to resonate with the State Department, which has an Office of U.S. Foreign Assistance and a designated foreign assistance budget.

Nation assistance—assistance rendered to a nation by foreign forces within that nation's territory based on agreements mutually concluded between nations.[4]

The term *nation assistance* is not often used in policy or strategy. For example, the current National Security Strategy mentions foreign assistance three times but does not use the term *nation assistance*. The first opportunity to create some clarity is to replace the term *nation assistance* with *foreign assistance* in the upcoming revisions of JP 3-0, *Joint Operations*, and JP 3-22, *Foreign Internal Defense*.

If foreign assistance were to replace nation assistance in joint doctrine, the definition would include that portion of security cooperation that falls outside the realm of nation assistance in figure 1. Foreign assistance then encompasses all of security cooperation and reduces some of the ambiguity. Security cooperation then focuses strictly on the DOD contribution to foreign assistance and encompasses all DOD interactions with foreign defense establishments to build both national and regional defense relationships that promote specific U.S. security interests, develop allied and friendly military capabilities for self-defense and multinational operations, and provide U.S. forces with peacetime and contingency access to host nations.[5]

Having addressed the larger constructs, it is possible to review and clarify the relationships between other programs and activities that occur within them. First is *security assistance* with a specific definition in relation to both DOD and State. It refers to a group of programs authorized by the Foreign Assistance Act of 1961, as amended, and the Arms Export Control Act of 1976, as amended. These programs are funded and authorized by State to be administered by DOD through the Defense Security Cooperation Agency.[6] This is the process by which the United States provides defense articles, military training, and other defense-related services. That portion of security assistance outside of security cooperation in figure 1 reflects State and other civilian agency involvement.

Foreign internal defense, one of the 11 core activities of special operations, is frequently thought of as only small engagement teams training foreign forces. Actually, it represents more to include

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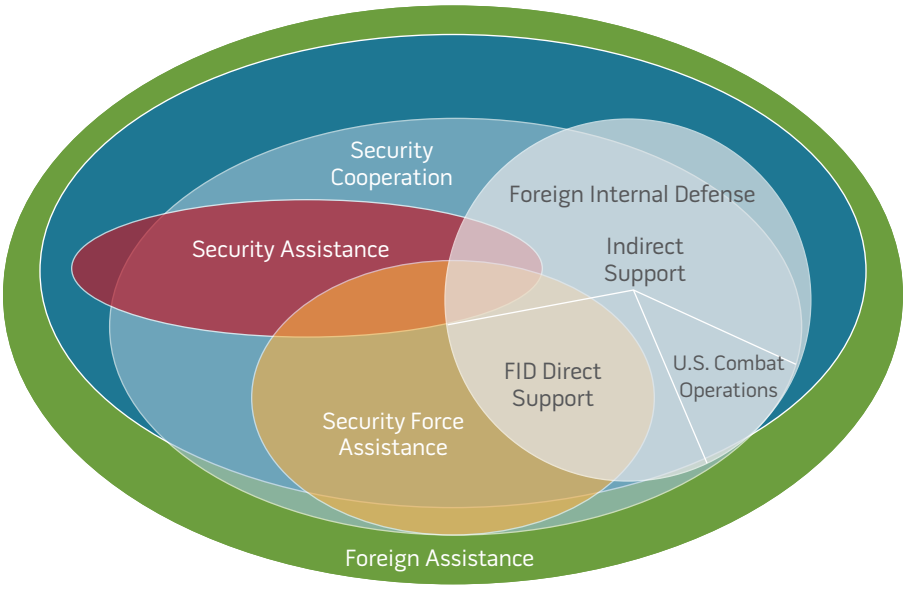
Security Cooperation Framework



the "participation by a foreign government in any of the programs taken by a host nation to free and protect its society from subversion, lawlessness, insurgency, terrorism, and other threats to its security."[7] It encompasses involvement in the internal defense of a host nation by both civilian and military agencies. As long as there is an internal threat to the host nation, any support provided by the United States to that nation falls under the definition of *foreign internal defense*. Large-scale U.S. counterinsurgency, counterterrorism, and counterdrug operations conducted in support of a host nation are just as much foreign internal defense as using special operations forces to train and advise foreign security forces.

This range of support to a host nation is captured in the three categories of foreign internal defense. The first is indirect support, with emphasis on strengthening national institutions through economic and military capabilities that contribute to self-sufficiency. The overlap of security assistance and indirect support in figure 1 reflects State Department–funded programs administered by DOD, which provides training and/or equipment to a foreign nation facing an internal threat to its security. Second is direct support, involving everything short of combat operations that provides direct military assistance to the host nation civilian populace or military when it is faced with a threat beyond its capabilities. This support does not overlap security assistance in figure 1 because these activities involve the employment of the joint force in a supporting role, are joint or Service funded, and do not involve the transfer of arms or equipment. This support is typically in the form of logistics and intelligence support to the host nation. The final category of foreign internal defense is U.S. combat operations and is meant to serve only as a stopgap measure until host nation security forces are able to provide security for the population. This includes major operations against internal threats but remains strategically defensive in nature. Although not widely recognized as such, the United States conducted foreign internal defense campaigns in Iraq and Afghanistan after the establishment of the host nation governments.

All three categories of foreign internal defense can take place simultaneously, with security assistance programs providing funding and equipment to the host nation (indirect support), intelligence-sharing with the ministry of defense (direct support), and American forces conducting large-scale counterinsurgency operations (combat operations). The level of U.S. involvement is driven by the political decisions of its elected leaders, the host nation's capability and capacity, and the nature of the threat, but all efforts must be in support of the host nation's programs for internal defense and development. The United States can assist in the development and assessment of these programs, but they must be administered by the host nation with all activities across all categories of foreign internal defense working toward a common objective. Based on the intensity and scope of the threat (for example, terrorists, violent criminal enterprises, or an insurgency), the United States could support some of the defense and development programs though routine security cooperation activities.

To promote U.S. interests and support allies and partners around the globe, the United States often provides security force assistance to train host nation forces. Security force assistance is DOD's contribution to a unified action effort to support and augment the development of the capacity and capability of foreign security forces and their supporting institutions toward achievement of specific objectives shared by the U.S. Government.[8] The approaches used by the joint force to build relationships and promote U.S. security interests vary widely from country to country.

Some U.S. partners already possess extensive security capability (qualitative) and capacity (quantitative), and it is important to develop interoperability with these partners through bilateral exercises and military-to-military exchange and education. Other partners' security forces benefit from security force assistance that focuses on the sustainable development of the foreign security forces' capabilities and capacities. These efforts represent only DOD activities, but they can be applied to all types of security forces and supporting institutions. Defense ministries and training institutions can be the target of security force assistance as well as local police and border patrol forces. These activities include organizing, training, equipping, rebuilding and building, and advising and assisting, but they must be conducted with, through, and by the foreign security forces.

As security force assistance is only a DOD activity, it remains fully inside the

realm of security cooperation in figure 1. A portion of *security force assistance* falls outside of the definition of *nation assistance* in the figure because the United States can provide security force assistance to regional organizations such as the African Union (another instance where *foreign assistance* should replace *nation assistance*). As shown in figure 1, some security force assistance activities are funded by security assistance programs, but only those that contribute to the sustainable capacity and capability of the host nation security forces. Some international military sales involve subsequent military training on the operation and maintenance of the equipment. While selling equipment does not constitute *security force assistance*, some subsequent military training on the equipment would fit into its definition.

Security force assistance is a primary tool to support partner nations when an internal threat is present. When the United States conducts indirect and direct support foreign internal defense, security force assistance is the means to bolster the host nation's efforts to counter internal threats. These security force assistance activities must be conducted with, through, and then ultimately by the host nation's forces, never as a substitute. The employment of U.S. forces in combat operations is a separate category of foreign internal defense and does not directly improve the capability or capacity of the host nation's forces. U.S. combat operations establish the time and space necessary to develop a host nation's forces until security can be provided with, through, and ultimately by them.

As previously discussed, *security cooperation* is a broad term encompassing many related but nonhierarchal programs, operations, and activities encompassing ends, ways, and means. Ends are the desired objectives or endstate. Ways are the sequence of actions, methods, tactics, and procedures most likely to achieve the ends. Means are the resources required to achieve the ends, such as forces, weapons systems, funds, will, and time to accomplish the sequence of actions. For the DOD contribution to foreign assistance, joint and Service operations and campaigns represent the ways as they guide the employment of the joint force toward a common objective and the desired endstate. Security assistance programs and security force assistance activities are part of the means in an ends-ways-means methodology.

Successful National Security Strategy, supported by foreign assistance and security cooperation, typically encourages a whole-of-government approach using all U.S. Government instruments of national power. This approach is supported by the joint force through interagency coordination. A more comprehensive approach designated as *unified action* integrates activities of the military, other interagency partners, multinational partners, and intergovernmental and nongovernmental organizations for unity of effort by all participants in a given activity, operation, or campaign. Much thought must be put into what type of foreign forces we are supporting or enabling. Equal thought must be placed on the strategic endstate for the security cooperation and foreign assistance efforts supported by the United States and the future use for the foreign security forces the Nation is supporting. Washington cannot expect to create foreign forces in its own image; the history and culture of the host nation must define the organization and ethos of its security forces. We must also take the nature of the threat and the operational environment into account when training and equipping foreign forces. Not all partners will fight wars of proxy for the United States. Instead they will use their forces as they deem appropriate, so security force assistance could dramatically shift the balance of power in underdeveloped regions or create other undesired or unanticipated consequences.

Grouping together the various security cooperation–related topics aids in budgeting and appropriating resources to accomplish strategic objectives. The employment of military forces, however, should never be obfuscated by unnecessary redundancies in language and definitions. It is important for the joint force commander and a joint staff to understand both the means available and the ways to sequence operations. Joint doctrine consists of the fundamental principles that guide the employment of U.S. forces in coordinated action toward a common objective. It is important for future joint doctrine to define and explain the relationship of security cooperation terms to facilitate understanding by the joint force.

JP 3-XX, *Security Cooperation*, is expected to address the many related terms and programs that support our nation's foreign policy. This emerging doctrine must refrain from forcing the security related topics into a hierarchal relationship. It must explain the supporting relationships while properly defining the ends, ways, and means of employing the joint force in support of security cooperation activities and related joint operations (for example, foreign internal defense). The future revision of JP 3-22, *Foreign Internal Defense*, should be synchronized with the development of JP 3-XX, while also expanding the discussion of the third category of foreign internal defense, U.S. combat operations, to consider large-scale counterinsurgency and counterterrorism operations conducted in support of a host nation. Joint Doctrine Note 1-13, *Security Force Assistance*, will also assist the joint force commander in identifying tools and resources for assisting foreign forces. However, none of these documents should be viewed as *the* synchronizer of all DOD activities; rather, each should highlight its unique planning considerations and use of existing programs to support strategic objectives. **JFQ**

Notes

[1] Joint Publication (JP) 3-0, *Joint Operations* (Washington, DC: The Joint Staff, August 11, 2011, revised).

[2] JP 3-29, *Foreign Humanitarian Assistance* (Washington, DC: The Joint Staff, March 17, 2009).

[3] JP 1-02, *Department of Defense Dictionary of Military and Associated Terms* (Washington, DC: The Joint Staff, November 8, 2010, as amended through January 31, 2011).

[4] Ibid.

[5] JP 3-22, *Foreign Internal Defense* (Washington, DC: The Joint Staff, July 12, 2010).

[6] Ibid.

[7] Ibid.

[8] Ibid.

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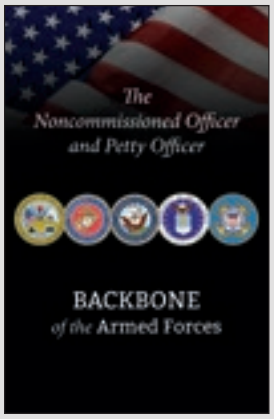

The Noncommissioned Officer and Petty Officer: Backbone of the Armed Forces

NDU Press, 2013 • 176 pp.

A first of its kind, this book—of, by, and for the noncommissioned officer and petty officer—is a comprehensive explanation of the enlisted leader across the U.S. Armed Services. It complements *The Armed Forces Officer*, the latest edition of which was published by NDU Press in 2007, as well as the Services' NCO/PO manuals and handbooks. Written by a team of Active, Reserve, and retired senior enlisted leaders from all Service branches, this book defines and describes how NCOs/POs fit into an organization, centers them in the Profession of Arms, explains their dual roles of complementing the officer and enabling the force, and exposes their international engagement. As Chairman of the Joint Chiefs of Staff General Martin E. Dempsey writes in his foreword to the book, "We know noncommissioned officers and petty officers to have exceptional competence, professional character, and soldierly grit—they are exemplars of our Profession of Arms."

Aspirational and fulfilling, this book helps prepare young men and women who strive to become NCOs/POs, re-inspires serving enlisted leaders, and stimulates reflection by those who have retired from or left active service. It also gives those who have never worn the uniform a better understanding of who these exceptional men and women are, and why they are properly known as the "Backbone of the Armed Forces."

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